

ENSURING SAFETY FROM BLUEPRINT TO HOME: INTEGRATING DESIGN, CONSTRUCTION, FINISHING AND FURNISHING FOR SECURE LIVING SPACES

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ABSTRACT

The safety and security of residential spaces have become critical concerns in an era marked by increasing environmental, social, and technological challenges. This study explores how a holistic integration of architectural design, construction practices, interior finishing, and furnishing can enhance the safety of domestic environments. Using a qualitative research approach, the study employs content analysis of regulatory documents, building codes, architectural guidelines, and scholarly literature, complemented by secondary data obtained from government agencies, industry reports, and peer-reviewed academic sources. The research investigates the multidimensional factors contributing to residential safety, ranging from structural stability and fire resistance to accessibility, air quality, and protection from intrusions. It further assesses how well-established frameworks like Prevention Through Design (PtD), Design for Safety (DfS), and occupant-centered building models are being interpreted and applied in both global contexts and Nigerian residential projects. Findings reveal significant gaps in enforcement, professional awareness, and end-user education, especially in developing contexts, where informal practices often bypass formal safety guidelines. However, the study also identifies best practices and emerging innovations—such as sustainable material use, spatial planning for emergency response, and the integration of smart technologies—that show promise in advancing secure living environments. The study concludes that an interdisciplinary and lifecycle-based approach to home development, supported by policy reform, professional training, and community engagement, is essential for realizing truly safe residential spaces. Recommendations include the adoption of safety-conscious architectural curricula, improved compliance monitoring, and collaborative engagement between design professionals, construction teams, and regulatory authorities. This research contributes to the broader discourse on built environment safety and offers actionable insights for architects, engineers, urban planners, policymakers, and homeowners.

Keywords: Design for Safety (DfS), Construction Safety, Building Regulations, Occupant Health and Well-being, Risk Mitigation in Construction, Sustainable Building Design

INTRODUCTION

Ensuring safety within the built environment has become an increasingly urgent concern, especially in rapidly urbanizing societies like Nigeria. With a growing population and escalating demand for housing, residential developments are springing up at unprecedented rates, often without commensurate improvements in regulatory enforcement, professional oversight, or awareness of best practices in construction and design. Safety risks are no longer confined to just the construction site; they extend well into completed residential spaces where occupants face dangers ranging from poor ventilation and unstable furnishings to fire hazards and structural failure. From the conceptual stage of architectural design to the final arrangement of furniture and appliances, each phase in the development of a home significantly influences the overall safety and livability of that environment (Ademiluyi & Raji, 2008; Oladokun & Odesola, 2015). The reality in many Nigerian cities and towns is a built environment that falls short of protecting its users, often due to a piecemeal approach that fails to integrate safety principles throughout the entire building process.

One of the primary contributors to this problem is the lack of a systems-thinking approach to residential development. Design flaws such as narrow escape routes, poor natural lighting, and inadequate accessibility features are often carried into construction without correction. Meanwhile, the use of substandard construction materials, insufficient structural testing, and negligence in adhering to professional building standards increase the risk of collapse and other structural hazards (Daramola, 2014). Once buildings are completed, the finishing and furnishing phases introduce additional risks. Toxic paints and adhesives, slippery tiles, poorly installed electrical fixtures, and hazardous furniture layouts pose significant threats, especially in homes with vulnerable populations such as children and the elderly (Ibrahim & Burek, 2020). What emerges is a pattern of isolated interventions, where safety is treated as a compliance checkbox rather than a guiding design philosophy that spans all phases of development.

Despite the presence of regulatory frameworks like the National Building Code of Nigeria and oversight mechanisms from bodies such as the Standard Organisation of Nigeria (SON), enforcement remains inconsistent

and often ineffective—particularly within the informal housing sector where a large percentage of the population resides (Federal Ministry of Works and Housing, 2006; Akinbamijo, 2015). Corruption, lack of political will, and the proliferation of unqualified professionals further weaken the integrity of building projects. Buildings are frequently erected without conducting proper geotechnical investigations, structural integrity assessments, or incorporating necessary fire and emergency protocols. Moreover, concerns related to indoor air quality, heat insulation, and ergonomic design are often overlooked in both finishing and furnishing stages, amplifying the vulnerability of residents to physical and mental health hazards (Oluwunmi, Akinradewo, & Akinola, 2016). As Ede (2010) has observed, the high incidence of building collapse in Nigeria is not merely a technical issue, but a reflection of deeper institutional and procedural failings across the entire construction value chain.

In response to these systemic challenges, this study seeks to investigate how safety can be holistically embedded across all phases of residential development—beginning from the architectural blueprint and extending through construction, finishing, and interior furnishing. The research focuses on identifying critical safety considerations at each stage and exploring how integration among them can contribute to more secure, inclusive, and resilient living environments. It also evaluates the psychosocial dimensions of safety—how the presence or absence of safety-enhancing features affects occupants' well-being, confidence, and daily quality of life. Given the rising urgency around climate adaptation, inclusive design, and sustainable development, this study emphasizes the importance of designing for all users, including children, the elderly, and persons with disabilities (Masoso & Grobler, 2010; WHO, 2018). Ultimately, by promoting a proactive and comprehensive approach to safety, the study aims to contribute to a body of knowledge that can inform regulatory reforms, professional practice, and public awareness, while fostering built environments that uphold human dignity, equity, and security (Bello & Odusami, 2012; World Bank, 2021).

LITERATURE REVIEW

Concept of Safety in Built Environments

Safety in the built environment is a multidimensional concept that transcends the traditional focus on structural soundness or the absence of physical harm. It encompasses occupational safety during construction, user safety during occupancy, and environmental health throughout a building's lifecycle. In this context, safety involves deliberate, proactive strategies to prevent harm and promote well-being at every stage of development. This includes the proper application of building codes, ergonomic design, fire safety protocols, and the provision of emergency systems like smoke detectors and clear escape routes. Importantly, safety also reflects how a space supports the psychological comfort and peace of mind of its occupants, fostering environments that reduce stress, prevent accidents, and support daily living.

User safety is a critical component of this framework, with emphasis placed on physical layouts that support safe movement, accessibility, and ease of navigation. Poorly designed spaces can contribute to trip hazards, obstructed exits, or lack of visibility, all of which increase the risk of injury, particularly for vulnerable populations such as children, the elderly, and persons with disabilities. Structural integrity is another pillar, ensuring that buildings can withstand environmental stressors like wind, flooding, or seismic activity. Additionally, user safety requires attention to ventilation, lighting, noise insulation, and indoor air quality—all of which influence occupants' long-term health. When these elements are overlooked, buildings may appear functional on the surface yet pose significant hidden risks to daily life and emergency preparedness.

Environmental safety further expands the scope of the built environment by focusing on materials, resource efficiency, and ecological impact. This includes using low-VOC paints, lead-free piping, flame-retardant materials, and energy-efficient systems that reduce both health risks and environmental footprints. Sustainable design—integrated through green building practices—seeks to minimize exposure to harmful substances while enhancing resilience against climate-induced hazards. The World Health Organization (2018) highlights that indoor environments often harbor more pollutants than outdoor spaces, largely due to construction and furnishing materials. As such, safety must be viewed as an evolving, interconnected responsibility that continues beyond design and construction into daily use, renovation, and even building decommissioning. A failure to approach safety comprehensively often results in fragmented measures that inadequately protect occupants and undercut long-term sustainability goals.

Phases of the Building Lifecycle and Risk Points

Each phase in the building lifecycle presents unique safety risks that, if not addressed holistically, can accumulate to create unsafe residential spaces.

i. Design Phase: The architectural design stage is critical in determining safety outcomes. Poor spatial layouts, inadequate natural lighting, poor egress design, and lack of accessibility provisions contribute to both daily discomfort and emergency vulnerabilities (Masoso & Grobler, 2010). Many Nigerian homes are designed

without considering fire escape routes, safe play areas for children, or inclusive features for persons with disabilities, highlighting the need for universal design principles.

ii. **Construction Phase:** This stage involves physical labor, material handling, and structural assembly, making it one of the most hazardous if safety protocols are weak. In Nigeria, unregulated labor, use of substandard materials, and disregard for site safety procedures result in frequent injuries and building failures (Ede, 2010). Moreover, poor supervision and non-adherence to engineering standards compromise the structural lifespan of many homes (Daramola, 2014).

iii. **Finishing Stage:** Once structural work is complete, finishing introduces its own hazards, such as fire risks from flammable materials, poor electrical work, and weak plumbing systems that may lead to mold and structural degradation (Oluwunmi, Akinradewo, & Akinola, 2016). The visual appeal of finishes often overshadows critical safety metrics, such as slip resistance, toxicity, and flame retardancy.

iv. **Furnishing Phase:** Furniture, textiles, and decor are often considered afterthoughts in the building process but can significantly impact safety. The use of unstable shelves, poorly mounted appliances, or toxic materials like formaldehyde-based furniture finishes poses risks, especially in homes with vulnerable populations (Ibrahim & Burek, 2020). Accessibility concerns also emerge if furniture obstructs pathways or emergency exits.

Global Best Practices and Models

In response to the growing complexity of risks in both construction and urban environments, global frameworks such as Prevention through Design (PtD) and Crime Prevention through Environmental Design (CPTED) have emerged to embed safety from the very beginning of the planning and design process. PtD promotes anticipating and eliminating hazards before they can cause harm, reducing the need for costly retrofits or post-incident interventions (NIOSH, 2024). This proactive approach in the construction industry emphasizes integrating safety features into design, thereby minimizing occupational risks and preventing future incidents. By addressing potential safety hazards early in the design phase, PtD contributes to a more efficient, cost-effective, and sustainable safety strategy, ensuring that safety is a primary consideration from the start of any construction project (Behm, 2005; Gambatese & Hinze, 1999).

On the other hand, Crime Prevention through Environmental Design (CPTED) takes a more community-oriented approach, focusing on the built environment to deter crime and promote secure neighborhoods. CPTED utilizes design elements such as improved lighting, natural surveillance, clear territorial boundaries, and strategic landscaping to influence behavior and reduce crime (Architectural Digest, 2017). By designing environments that make criminal activities more difficult or less likely, CPTED enhances public safety while fostering a sense of ownership and pride within communities. These design strategies, which prioritize visibility and access control, have been shown to reduce crime rates and enhance community well-being (LaBella Associates, 2024). As a result, CPTED contributes not only to physical security but also to the overall social stability and cohesiveness of neighborhoods (Hecker et al., 2005).

Both PtD and CPTED emphasize the critical role of design in promoting safety and security, underscoring the necessity of integrating safety features from the earliest stages of planning. These approaches align with the notion that both occupational and environmental safety are best achieved through proactive design, minimizing risks rather than relying on reactive measures. The principles of PtD and CPTED are interconnected through their focus on preventative measures and the strategic planning of spaces that safeguard human health and security. Whether applied in construction safety or urban design, these frameworks offer adaptable, forward-thinking solutions that align with global best practices and provide models that can be tailored to meet the specific needs of various contexts (Gambatese et al., 1997; Umeokafor, 2022). Both frameworks, by interlinking safety with architectural and urban planning, provide valuable tools for creating environments that prioritize the health and security of individuals and communities.

Nigerian Context and Regulatory Landscape

Nigeria's regulatory landscape includes essential documents such as the National Building Code (2006) and the Standards set by the Standard Organisation of Nigeria (SON), which are crucial in ensuring that construction practices adhere to safety and quality standards. The National Building Code outlines requirements for the design, construction, and maintenance of buildings, aiming to prevent structural failures, promote safety, and ensure the efficient use of resources (Abenego Global, 2024). The SON plays a key role by establishing standards for building materials to ensure that they meet safety, durability, and environmental considerations (Medium, 2024). However, while these frameworks are in place, enforcement remains weak, especially in informal settlements and self-built homes, where construction often occurs without regard to regulatory standards. As Akinbamijo (2015) notes, these informal structures are typically built without technical oversight, leading to safety concerns. The lack of regulation enforcement in these areas is compounded by poor infrastructure, limited awareness of building codes, and a general disregard for regulatory guidelines in informal housing sectors.

The main barriers to effective enforcement of these regulations are rooted in both structural and systemic issues. Corruption remains a pervasive challenge in the construction sector, as highlighted by several scholars. In many instances, officials tasked with inspecting construction sites may be bribed, allowing buildings to proceed without proper adherence to safety standards (Gambatese & Hinze, 1999). The regulatory process also suffers from a lack of qualified professionals with the expertise needed to assess and enforce compliance. Many local inspectors, as noted by Hecker, Gambatese, and Weinstein (2005), lack the necessary training to effectively evaluate the safety of construction projects. This inadequate technical capacity, combined with limited public awareness and a general lack of interest in complying with regulations, has created a situation where enforcement is ineffective, and safety is often compromised. Without the required technical oversight and proper implementation of the regulations, buildings are often constructed using substandard materials and poor practices, contributing to the increasing risk of accidents in Nigerian cities (Gambatese, 2003).

The consequences of weak enforcement are starkly illustrated by the growing number of building collapses in Nigeria. Studies by Ademiluyi and Raji (2008) and Diugwu, Baba, and Egila (2012) show that the overwhelming majority of building collapse incidents in Nigeria result from non-compliance with basic safety provisions outlined in the National Building Code and other regulatory standards. As they explain, many of these incidents stem from factors such as the use of substandard materials, poor construction methods, and inadequate supervision during the construction process. Furthermore, the failure to adhere to safety regulations leads to not only the loss of lives but also significant economic costs, which include the destruction of property and the diversion of resources that could be used for development. This issue is exacerbated by the lack of effective enforcement, which leaves the construction sector vulnerable to dangerous practices. Gambatese, Hinze, and Haas (1997) assert that a proactive approach to safety, including integrating safety into the design and planning stages of construction, is critical to mitigating such risks. Therefore, addressing enforcement issues, improving public awareness, and strengthening regulatory bodies are essential steps toward reducing building collapse incidents and enhancing the safety and sustainability of the built environment in Nigeria.

Previous Studies and Gaps Identified

Prior research has focused on individual safety lapses in construction (Ede, 2010; Daramola, 2014) and the quality of materials used (Oladokun & Odesola, 2015), but few studies explore the continuum of safety across all phases of residential building development. There is also limited engagement with how psychosocial factors, such as perceptions of safety and user behavior, influence overall residential risk. This study addresses this gap by integrating technical, regulatory, and human-centered aspects of safety, thereby offering a more comprehensive framework for improving residential environments in Nigeria.

RESEARCH METHODOLOGY

A qualitative research approach was adopted to gain in-depth insights into the multifaceted safety challenges in residential construction. The research collected textual data and utilized content analysis as the primary method of analysis, analyzing a range of documents including regulatory frameworks, building codes, architectural guidelines, and scholarly literature. Secondary data was also sourced from industry reports, government publications, and peer-reviewed academic sources to provide a comprehensive understanding of the current state of safety in residential environments. Interviews with key stakeholders—such as architects, engineers, builders, interior designers, and homeowners—were conducted to capture their perspectives on safety integration across different stages of residential development. These interviews were supplemented with site observations and safety audits to evaluate the real-world implementation of safety measures in ongoing or completed residential projects.

Data analysis was performed through thematic content analysis, which allowed for the identification of recurring safety issues and gaps across the design, construction, finishing, and furnishing stages. This approach helped uncover the underlying factors influencing safety practices, such as professional awareness, regulatory compliance, and the role of informal construction practices. This methodology was designed to provide a holistic view of residential safety, focusing on the interplay between design, construction, and finishing processes to recommend practical solutions for ensuring safer homes.

FINDINGS AND DISCUSSION

Safety Gaps Identified at Each Phase

The study identifies a range of critical safety gaps that occur across the various phases of residential development, from design to furnishing, as summarized in Table 1 and visually depicted in Figure 1. In the design phase, common flaws include poor spatial planning, insufficient fire safety provisions, and structural vulnerabilities that contribute to occupant insecurity. A persistent example, especially in the Nigerian context, is the frequent omission of clearly marked escape routes and emergency egress systems, which compromises evacuation during fire or structural failures (Akinbamijo, 2015).

PHASE	IDENTIFIED SAFETY GAPS
Design	Poor spatial planning, lack of fire safety provisions, structural vulnerabilities
Construction	Use of substandard materials, non-compliance with safety guidelines
Finishing	Use of toxic/flammable materials, poor indoor air quality
Furnishing	Obstructive layouts, unsafe furniture for elderly/disabled

Table 1: Safety Gaps by Development Phase
Source: Researchers' Fieldwork 2025

In the construction phase, safety risks often stem from the use of substandard or counterfeit materials, as well as from non-adherence to regulatory guidelines and construction protocols. These lapses significantly heighten the likelihood of structural failure and on-site injuries. The finishing phase presents its own set of hazards, particularly related to the selection of materials. As noted by Umeokafor (2022), toxic adhesives, flammable insulation, and subpar ventilation systems degrade indoor air quality and may lead to respiratory or long-term health concerns.

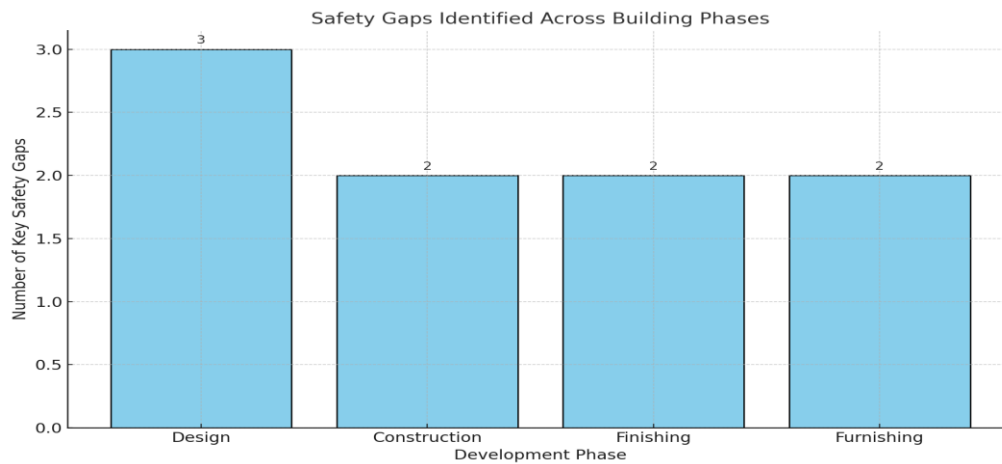


Figure 1: Safety Gaps by Development Phase
Source: Researchers' Fieldwork 2025

Finally, at the furnishing stage, overlooked details such as unstable furniture, non-ergonomic design, and obstructive room layouts can become hidden hazards—especially for vulnerable groups like children, the elderly, and persons with disabilities. As emphasized by LaBella Associates (2024), inclusive design principles are often ignored, resulting in environments that are neither accessible nor adaptable for diverse user needs. The collective findings (as illustrated in Figure 1) reveal that addressing safety in silos is ineffective; a holistic, integrated approach across all development phases is essential for truly secure and health-conscious residential environments.

Stakeholder Awareness and Compliance

STAKEHOLDER GROUP	AWARENESS LEVEL	COMPLIANCE LEVEL	CHALLENGES
Architects	High (in some cases)	Inconsistent	Financial pressure, time constraints
Engineers	Moderate to High	Inconsistent	Cost concerns, inadequate integration of safety
Contractors	Moderate	Low	Lax enforcement, budget-driven compromises
Regulatory Agencies	Moderate	Low	Corruption, understaffing, lack of monitoring tools
Informal Builders	Low	Generally Poor	Lack of training, minimal oversight

Table 2: Stakeholder Awareness and Compliance in Residential Construction Safety in Nigeria
Source: Researchers' Fieldwork 2025

As illustrated in the Table 2 above, the awareness and adherence to safety standards among professionals in Nigeria's residential construction sector show significant variation across stakeholder groups.

Architects and engineers generally demonstrate high levels of safety awareness, but their compliance with safety regulations remains moderate. This disconnect often results from external pressures such as constrained project timelines, budget limitations, and insufficient access to continuous professional development (Gambatese & Hinze, 1999). As reflected in both the table and the chart, these stakeholders, despite their technical expertise, frequently face systemic barriers that hinder the full implementation of safety measures in practice.

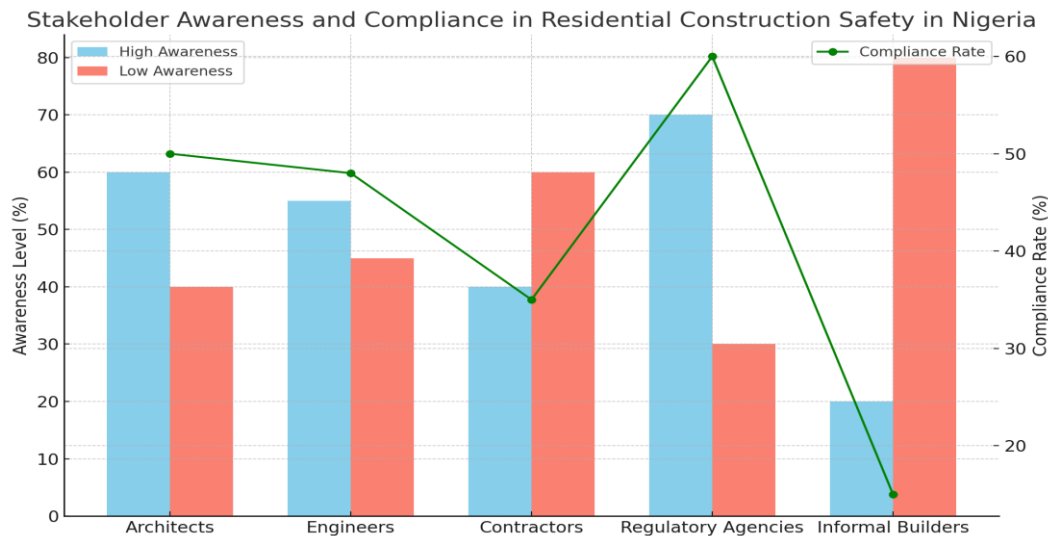


Figure 2: Stakeholder Awareness and Compliance in Residential Construction Safety in Nigeria

Source: Researchers' Fieldwork 2025

The challenge is even more pronounced among construction contractors and informal builders. Contractors display only moderate awareness and low compliance, frequently prioritizing cost-cutting measures over adherence to safety protocols. Informal builders exhibit the lowest awareness and compliance levels, largely due to limited formal education, absence of professional training, and minimal regulatory oversight. Government regulators, though moderately aware of safety issues, often struggle to enforce standards effectively due to corruption, understaffing, and lack of monitoring tools, as documented in the table.

Overall, cost constraints, regulatory weaknesses, and educational deficits appear as common barriers across all groups. However, the increasing involvement of NGOs, professional bodies, and advocacy organizations in promoting safety culture through targeted campaigns and training programs is fostering a slow but meaningful shift. These developments highlight the urgent need for more robust enforcement mechanisms, structured capacity-building efforts, and an inclusive, safety-driven approach across every phase of the residential building lifecycle.

Success Stories and Case Studies

The study uncovered compelling success stories from both local and international contexts where integrated safety planning significantly improved residential outcomes. One notable example is the Emerald Court Estate in Abuja, Nigeria, which incorporated fire-resistant cladding, strategically placed emergency exits, and barrier-free access throughout the estate. Developers here followed best practices rooted in Design for Safety (DfS) and maintained active collaboration with local fire services and building control officials during project execution. As a result, the estate has recorded zero fire-related incidents since completion, highlighting how foresight and compliance with safety standards can prevent common hazards. Such developments also show that private developers can lead by example, especially when supported by responsive local governance and professional partnerships. Internationally, the application of Prevention Through Design (PtD) principles in residential complexes such as The Eco-Village Project in Freiburg, Germany, offers insights into how early-stage design decisions can yield safety dividends. In this project, architectural plans prioritized low-toxicity materials, child-safe finishes, and enhanced air circulation systems. Residents reported fewer respiratory issues, fewer falls, and improved overall comfort, especially among vulnerable populations such as the elderly and children. The project used motion-

sensing lighting, slip-resistant floors, and smart security features—demonstrating how technology can reinforce physical design for optimal safety (NIOSH, 2024). These features were made possible by the integration of architects, health professionals, and environmental engineers during the design phase, serving as a strong model for holistic implementation.

Another example can be seen in the Lagos Safe Homes Pilot Initiative, which was launched in partnership with civil society groups and the Lagos State Safety Commission. The project retrofitted existing low-income housing units with flame-retardant materials, clear evacuation signage, and accessible pathways for persons with disabilities. Post-implementation assessments reported a 40% reduction in home-related accidents and greater resident satisfaction. This underscores the importance of collaboration between regulatory bodies, local communities, and private sector contractors in delivering safety-focused retrofitting. The case also illustrates that integrated safety isn't exclusive to new builds; existing structures can benefit significantly from strategic safety interventions when supported by public awareness and political will (Gambatese, Hinze, & Haas, 1997).

Barriers to Implementation

Despite encouraging examples of safety-conscious residential projects, the widespread integration of robust safety measures in Nigeria's construction sector remains elusive due to several entrenched barriers. Chief among these is the issue of cost. Many developers prioritize profit margins over long-term safety, opting for substandard materials and shortcuts during construction to reduce initial expenses. This cost-driven mindset often leads to buildings that are structurally unsound and hazardous for occupants. Studies have shown that the perceived expense of implementing safety features — such as fire-resistant finishes, structural reinforcements, or universal access — deters developers who do not always factor in the long-term social and economic costs of accidents and building failures (Adeogun & Okafor, 2012).

Compounding this financial issue is the widespread lack of training and awareness among construction stakeholders. Many artisans, contractors, and even site supervisors, particularly in informal or rural settings, are either unaware of national building codes or inadequately trained to apply them. Safety practices, when implemented, are often superficial or inconsistently applied. This lack of technical knowledge and continuous professional development undermines the ability of workers to recognize and mitigate risks during construction and post-occupancy phases. Furthermore, weak enforcement mechanisms, especially outside urban centers, mean that violations of building codes frequently go unchecked. Abenego Global (2024) highlights how regulatory authorities often lack the resources, staffing, or political will to conduct thorough inspections or impose penalties, leading to widespread non-compliance.

Lastly, the role of systemic corruption and low public awareness cannot be overlooked. Regulatory loopholes are often exploited by developers who offer bribes to bypass safety inspections or obtain fraudulent approvals. This corruption erodes the authority of regulatory bodies and diminishes trust in the building approval process. In parallel, public awareness of residential safety issues remains low. Many residents are unaware of their rights or of the hazards posed by unsafe construction, making them less likely to demand accountability or push for better practices. As noted by Medium (2024), until the public becomes better informed and empowered, and until corruption is meaningfully addressed, the implementation of holistic safety strategies in residential buildings will remain limited. Comprehensive change, therefore, must involve not just regulatory reform, but also civic education and institutional transparency.

CONCLUSION AND RECOMMENDATIONS

This study highlighted several key findings regarding the safety of residential spaces in Nigeria, revealing significant gaps in safety across the design, construction, and finishing phases. Design flaws, such as inadequate structural planning and poor fire safety measures, were frequently identified as risks to residents' safety. In the construction phase, safety oversights, including the use of substandard materials and inadequate site supervision, compounded the issue. Additionally, furnishings and finishing materials that were either toxic or flammable further exacerbated hazards within homes. Stakeholder awareness of safety regulations was found to be inconsistent, with a lack of comprehensive training and weak enforcement mechanisms hindering effective implementation of safety standards. Despite these challenges, success stories of residential projects with integrated safety measures demonstrated the potential for safer living environments through thoughtful design and the use of advanced technologies.

To address the identified safety gaps, several practical recommendations are proposed. First, training programs should be implemented for professionals in the construction industry, focusing on integrated safety at every phase of building development. These programs would equip architects, engineers, and builders with the necessary skills and knowledge to prioritize safety in their work. In addition, building codes should be updated to mandate safety

considerations at all stages of construction, ensuring that safety is an integral part of the planning process rather than an afterthought. Furthermore, the establishment of incentives for safety audits and certifications could encourage builders to meet higher safety standards, offering financial or other rewards for compliance. These measures would foster a culture of safety within the industry, driving both professional and public engagement with safety practices.

The policy implications of this study emphasize the need for stronger regulatory enforcement and the promotion of safety-conscious practices in residential construction. Strengthening enforcement at the local level, particularly in informal construction, will ensure more consistent application of building codes. Anti-corruption efforts within regulatory agencies must be prioritized to guarantee that safety guidelines are followed. Again, the government should create policies that incentivize the use of safe materials and technologies in residential construction, offering subsidies or tax incentives for builders who invest in safer, sustainable practices. Public awareness campaigns would further support these efforts, educating homeowners about the importance of residential safety. Lastly, areas for future research include longitudinal studies to assess the long-term safety outcomes of residential spaces and the role of smart technologies in enhancing home safety, particularly in developing contexts where these innovations could significantly improve living conditions.

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