Barriers to the Domestication and Implementation of the Nigerian National Building Code in Yobe State

Machina M. A.[1], Musa Muh'd[2], Yusuf Y. H.[2], Hamza Bappah[2], Zubairu L. A.[2], Kwami I. A.[2], Bello A. S.[2]

[1]Department of Building, University of Maiduguri, Maiduguri-Nigeria

[2]Department of Building, Tafawa Balewa University, Bauchi-Nigeria

DOI: https://dx.doi.org/10.51244/IJRSI.2026.1306000058

Received: 18 May 2026; Accepted: 23 May 2026; Published: 21 June 2026

ABSTRACT

The Nigerian Nation Building Code (NBC) provides essential technical standards for safe construction, aiming to ensure structural integrity, public welfare, and sustainability; it is designed for domestication into state laws. This study investigates the extent of domestication, implementation, and compliance with the NBC in Yobe State using a mixed-methods approach. A purposive, maximum variation sampling technique was employed to engage 420 stakeholders – including developers, contractors, clients, construction professionals, and royal fathers - alongside an assessment of 300 randomly selected building projects. Field investigations reveal that the NBC has not yet been domesticated in Yobe State. Data on seven identified barriers to the domestication of the NBC showed excellent overall reliability ($\alpha = 0.942$), and based on their Relative Importance Index (RII), the barriers were ranked in descending order of criticality as: Poor Awareness and Technical Knowledge; Overlapping and Fragmented Jurisdictions; High Cost of Compliance; Dominance of the Informal Sector; Weak Institutional Capacity; Legal and Constitutional Constraints; and Political Inertia and Resistance to Regulations. Furthermore, ten core NBC areas were analyzed for compliance. Analysis using Chi-Square test shows a significant difference in compliance between public (76.18%) and private (23.20%) building projects. The study indicts the Yobe State Government for prioritizing safety on public projects while neglecting private sector safety standards. Recommendations include, among others, the full domestication of the NBC and the establishment of a dedicated Building Control Agency that is independent of other Ministries, Departments, and Agencies (MDAs) in the state.

Keywords: Nigerian National Building Code, Domestication, Implementation, Yobe State

INTRODUCTION

Building Code

A building code is a set of mandatory rules and standards regulating the design, construction, alteration, and maintenance of structures to ensure public health, safety, and general welfare. These regulations establish minimum requirements for structural integrity, fire protection, and sustainability, aiming to reduce collapse risks and protect occupants (Saulawa, 2022; Conifer, 2025; Osamudiamen et al, 2025a; Fika et al, 2025; Umar et al, 2026)

Key Aspects of Building Codes

• **Safety Requirements:** Covers structural design, fire protection (sprinklers, escape routes), and electrical/mechanical systems (Conifer, 2025).

• **Mandatory Compliance:** No construction or renovation should occur without obtaining a development permit or building plan approval (CORBON/NIOB, 2011).

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

• **Professionalism:** Ogunbiyi (2014) opined that codes mandate that projects are designed and supervised by registered professionals (architects, engineers, builders).

• **Enforcement:** Compliance is monitored through inspections, with non-compliance potentially leading to demolition or legal prosecution (Federal Republic of Nigeria, 2007).

• **Scope:** While focusing on safety, modern codes increasingly cover sustainability, such as energy efficiency and accessibility (Conifer, 2025; Dutum, 2025).

Therefore, building codes are legal regulations used by authorities to ensure buildings are safe, durable, and sustainable.

The Nigerian National Building Code

According to Conifer (2025), the Nigerian National Building Code (NBC) is Nigeria's foundational regulatory framework governing building design, construction, alteration, use, maintenance, and demolition. Conifer (2025) further added that the code, which was developed to address frequently reoccurring substandard construction and structural failures, establishes minimum enforceable standards across all stages of the built environment lifecycle--from pre-design to post-occupancy--safeguarding public safety, health, welfare, and environmental sustainability. Initiated by the Federal Ministry of Works and Housing in 1987 and implemented in 2007 following its 2006 approval, the NBC is intended to mitigate structural failures and unsafe construction practices. CORBON/NIOB (2011) identified key drivers for the code as rising building collapses, rampant quackery, inadequate standards, poor urban planning, and a weak maintenance culture. While initiated federally, enforcement requires adoption by state and local governments.

Aim and Objectives of the Study

The aim of this study is to assess the level of domestication, implementation, and compliance with the Nigerian National Building Code (NBC) in Yobe State, identifying barriers to adoption and recommending strategies to enhance the safety of the built environment. Its objectives are:

(i) To evaluate the current status of domestication and adoption of the NBC by the Yobe State government.

(ii) To assess the level of awareness and compliance of building professionals and developers with NBC standards in design, construction, and maintenance.

(iii) To identify the legal, institutional, and technical barriers hindering the domestication and implementation of the NBC in Yobe State.

(iv) To recommend strategies to overcome these barriers for improved building safety in the state.

LITERATURE REVIEW

Global Perspectives on Building Codes

Globally, leading nations implement building codes through structured, region-specific, and highly accountable frameworks. These systems prioritize public safety, sustainability, and strict compliance. Common practice among successful international models include:

• **United Kingdom:** Enforced by local planning authorities, building codes rely on rigorous third-party inspection, robust digital platforms, and active public accountability (Sholanke and Adisa, 2025).

• **United States:** States customize model codes from the International Code Council (ICC) to fit reginal needs. Enforcement is decentralized but strictly supported by professional licensing boards (Fasunle et al., 2019).

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

• **Australia:** A unified code that outlines the performance requirements for design, construction, and plumbing of buildings in Australia. It is regularly updated to account for local environmental hazards like bushfires and cyclones (Sin, 2026).

• **Malaysia:** Operates a centralized system governed by the Uniform Building By-Laws (UBBL). It prioritizes fire safety and green building standards through digital permitting and mandatory professional certifications (Joachim et al., 2017).

Structure of the Nigerian NBC

The National Building Code Consists of four parts containing a total of 15 sections as detailed in Table 1.

Table 1: Details of Parts and Sections of the Nigerian National Building code

Parts	Sections		Remarks
PART I: Administration	No.	Description	
	1.	Citations and Commencement	Declares the NBC as statutory guidance within Nigeria.
	2.	Interpretations, Definitions and Abbreviations	Standardizes terminology used across the Code
	3.	The Establishment of a Building Code Advisory Committee	Establishes the Building Code Advisory Committee (BCAC), under the Federal Ministry of Housing and Urban Development, with multi-disciplinary professional representation for code development and technical oversight
PART II: Technical	4.	Building Design	Classifies building by occupancy (residential, commercial, institutional, high-rise, etc.), establishing minimum requirements for each
	5.	Building Construction Classifications	Details structural elements, load categories, foundation types, and assembly requirements.
	Pre-Design Stage:		
	6.	Environment and General Building Requirements	Mandates site selection criteria including soil testing, topography adaptation, drainage, and minimum setbacks.
	Design stage:		
	7.	Architectural Drawing Requirements	Includes minimum requirements for circulation, egress, natural lighting and ventilation, staircases (e.g., 900 mm minimum handrail height), and emergency exit widths.
	8.	Civil/Structural technical design Requirements	Requires foundation design based on geotechnical analysis; concrete and brick strength; structural reinforcement and minimum load calculation; includes wind load design in coastal zones.
	9.	Services Engineering Design Requirements.	Mandates standard design for electrical wiring, earthing, capacity loads, pipe sizing, drainage and potable water supply.
	Construction Stage:		
	10.	Building Material and Components Requirements	Only approved materials (by SON, COREN, NSC standards) may be used for structural elements, roofing, plastering, and finishes.
	11.	Building Construction Requirements	Insists on professional supervision of critical installations; prohibits unlicensed builders from major works; includes defined inspection milestones.
	Post Construction Stage:		
	12.	Post Construction Requirements	Requires ongoing structural assessments; high-rises must be surveyed periodically; registers for inspection and maintenance must be maintained.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

PART III: Enforcement.	13.	Control of Building Works	Stipulates mandatory plan approvals, inspections at foundation, shell, and finishing stages; issuance of completion and occupation certificates; and sanctions (demolition order, fines, prosecution) for non-compliance.
PART IV: Schedules and References	14.	Referenced Standard	List referenced technical standards (e,g. SON, COREN, NSE publications) and standard forms for permit, inspection, and occupancy certification.
	15.	Compliance Forms	Requires the issuance of Compliance form at every stage of the project duly signed each and every professional concerned with the stage.

SOURCE: Federal Republic of Nigeria (2007) & Conifer (2025)

Domestication of the NBC in Yobe state

Studies conducted by Fika et al (2025) revealed that Yobe state government lacks any specific legal backing to make the NBC mandatory and hence, domestication of the code has remained weak in the state, with "limited adoption hindering the enforcement of standardized building practices and contributing to low compliance levels." Fika et al (2025) further added that, "Despite the code's purpose to ensure safety and quality, its implementation in the state faces significant obstacles, including low awareness among professionals and a lack of political will, leading to reliance on outdated or informal regulations." In 2021 however, the Yobe State Government passed the Yobe State Land Use Regulations, 2021 and the Yobe State Geographic Information service (YOGIS) Law 2021, to enhance land management in the state (Yobe State Government, 2022). With these developments, therefore, all land matters in Yobe State are managed through the following organizations:

(i) **Yobe State Geographic Information Service (YOGIS):** The core mandate of this organization is to modernize land administration through technology. It issues Certificate of Occupancy (C of O), conducts survey mapping, registration of land transactions, manages the land information system, and reduces land disputes. The organization therefore focusses on land ownership documentation and special data (Yobe State Government, 2022).

(ii) **Yobe State Urban Planning and Development Agency (YSUPDA):** Its core mandates are developing, managing, and sustaining urban infrastructure and aesthetics, with functions that include implementation of Master Plans, planning new layouts, maintaining public open spaces, and managing urban renewal/slum upgrading. The organization therefore focusses on physical development and environmental enhancement (Yobe State Government, 2022).

(iii) **Development Control Unit of the Ministry of Housing and Urban development:** This department enforces compliance with urban planning and building standards. It functions include processing building permits, monitoring construction sites for compliance with master plans and regulations, serving stop-work notices, and removing illegal developments (Development Control Unit, 2023).

In summary, YOGIS tells you who owns the land and where it is. The Urban Development Board plans how the area is utilized and developed. The Development Control Unit ensures you build according to the rules set by the board on the land registered by YOGIS (Yobe State Government, 2022; Development Control Unit, 2023; Fika et al, 2025). All other state and local government building matters in the state are handled by the Building Directorate of the Ministry of Housing & Urban Development, Local Government Works Departments, and the State Housing and Property Corporation (Fika et al, 2025).

Barriers to Domestication of NBC at State Level

Osamudiamen et al (2025a) opined that the non-domestication of the Nigerian National Building Code (NBC) across various states in Nigeria is primary due to legal, institutional, economic, and political factors, which have left the 2006 code largely operating as voluntary guidelines rather than binding law. Osamudiamen et al (2025b) further added that, despite the Federal Government's advocacy, many state governments have failed to

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

pass the enabling legislation required to make the code enforceable within their jurisdictions. Notwithstanding, factors identified in literature as responsible for non-domestication of the NBC at state level in Nigeria are:

1. **Legal and Constitutional Constraints:** Osamudiamen et al (2025a) believed that, under Nigeria's federal system, National Assembly cannot mandate each state to voluntarily pass enabling laws, and since building control and land use planning are residual matters handled exclusively by state governments, the domestication of the NBC is bound to face lukewarm attitude in states of the federation.

2. **Weak Institutional Capacity & Corruption:** Osamudiamen et al (2025a) also indicated that state-level building regulatory agencies are often underfunded, understaffed, and lack autonomy. They further opined that widespread corruption within regulatory agencies results in approval of plans without proper inspection, undermining the necessity of a strict code.

3. **Political Inertia & Resistance to Regulation:** Umar et al (2026) and Osamudiamen et al (2025a) were of the view that, many state governments lack the political will to enact or enforce new, stricter standards due to various political reasons including fear of losing political acceptability. There is also resistance from developers and contractors who view compliance as an additional cost other than a public good (Umar et al, 2026).

4. **Poor Awareness and Technical Knowledge:** A significant number of stakeholders, particularly in rural areas, are unaware of the NBC's provisions. In addition, professionals often rely on outdated regulations or traditional practices, and there is a dearth of reference materials and training on the new code (Mba et al., 2025; Fika et al, 2025).

5. **Overlapping and Fragmentated Jurisdictions:** In several states, building control is fragmented across local governments, town planning authorities, and environmental agencies, causing confusion, conflict, and creating a 'regulatory vacuum' (Osamudiamen et al, 2025a).

6. **Dominance of the Informal Sector:** Osamudiamen et al (2025a) opined that over 70% of construction activities in Nigeria are conducted by the informal sector, operating outside of official regulatory oversight, making it difficult to enforce a formal, comprehensive building code.

7. **High Cost of Compliance:** Economic hardship, high costs of materials, and inflation force many developers to cut corners and avoid standard procedures that would be mandated by a fully domesticated code (Umar et al, 2026; Osamudiamen et al, 2025a).

NBC Enforcement and Compliance Mechanism Areas Relevant to the Study

1. **Pre-Design Stage of the Building**

Subsection 13.2.1.1 of the NBC requires that the owner of any intended building project should possess "(i) Perimeter survey and topographical survey of the site, and (ii) The Development Permit for the proposed development obtained from the Planning Authority."

2. **Design Stage of the Building**

Subsection 13.2.2.1 gave the requirements for the design stage of the building as "Working drawings and specifications prepared by registered design professionals."

3. **Construction Stage of the Building**

In subsection 13.2.3.1 the NBC gave the major requirement at the construction stage as "the contract documents." However, Subsection 13.2.3.2 insisted that, "The Code Enforcement Division /Section/Unit shall ensure that the above requirements are submitted with application for building approval."

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

4. **Notice of Completion of Various Stages of the Building**

Subsection 13.6.1 stated that, "A person carrying out building works shall give the Code Enforcement Division/Section/Unit notice in writing of:

(i) The commencement of work, at least seven days, in advance. [[

(ii) The completion of any stage of work, not more than seven (7) days after such completion.

(iii)The completion of the building, not more than (7) days thereafter……".

5. **Site Signboard**

In addition to regulations on 'notices' to be served to the Code Enforcement Agency on the completion of various stages of the building work, subsection 13.6.1 further stressed that "Before the commencement of any construction works, a site signboard showing the names and addresses of the client, professionals and contractor involved in the project shall be erected in a place to be seen clearly by the general public."

6. **Inspection of On-going Building Work**

Subsection 13.7.1 stated that "All construction or work for which an approval is required shall be subject to inspection by the Code Enforcement Division/Section/Unit…". However, subsection 13.7.2 pointed that "it shall be the duty of the person carrying out the work authorized by a permit to notify the Code Enforcement Division/Section/Unit that such work is ready for inspection."

7. **Certificate of Use and Habitation**

Subsection 13.3.11.1 pointed out that "A building or structure hereafter erected shall not be used or occupied in whole or part until the certificate of use and habitation shall have been issued by the Code Enforcement Division/Section/Unit."

8. **Execution and Supervision of Building Works**

The key subsections on workmanship and supervision are as follows:

(i) 13.12.2: All building works shall be generally supervised by a registered architect and engineers in line with their inputs.

(ii) 13.12.3: Any contractor who is engaged to carry construction work m;; in accordance with this Code shall certify the professional registration laws of the country.

(iii) 13.12.4: The management of the execution of the building work including the supervision of artisans and tradesmen shall be carried out by a registered builder.

RESEARCH GAP

Although many provisions of the Nigerian National Building Code (NBC) were practiced informally prior to its adoption to ensure user safety (CORBON/NIOB, 2011), the code was formalized to systematically regulate project execution; however, its voluntary status in state-level governance remains a challenge. Existing literature primarily focuses on the formal adoption of the code, neglecting to assess the actual field-level implementation and compliance on physical construction projects, particularly in localities where the code has not been formally adopted. This study addresses this gap by assessing the practical level of compliance with key NBC provisions across 300 randomly selected building projects in Yobe State. Furthermore, it categorizes these projects into public and private sectors to identify significant differences in compliance levels, in addition to evaluating the status of the code's domestication in the state.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

METHODOLOGY

Distribution of Questionnaires and Collection of Data

To investigate the National Building Code (NBC) in Yobe state, this study utilized a two-phase, concurrent mixed-method design. The first phase analyzed seven critical factors contributing to poor code domestication, while the second phase evaluated compliance levels across ten core NBC areas within all 17 local government areas.

Participants, including developers, contractors, clients, construction professionals, and royal fathers, were chosen using a purposive, maximum-variation sampling technique to ensure diverse, high-level industry perspectives. Data collected continued until thematic saturation was achieved, and results were validated against documentary evidence to enhance reliability and reduce bias. The distribution and collection of questionnaires for both research phases are detailed in Tables 2a and 2b.

Table 2a: Distribution and Collection of Questionnaires in Phase I

No. of Questionnaires	**Developers (Group A)**	**Contractors (Group B)**	**Clients (Group C)**	**Construction Professionals(Group D)**	**Royal Fathers (Group E)**	**Total**	**Percentage (%)**
Administered	50	100	50	100	120	**420**	**100**
Received	46	82	43	85	114	**370**	**88**

Table 2b: Distribution and Collection of Questionnaires in Phase II

Types of Building Works	**Public Building Works**	**Private Building Works**	**Total**	**Percentage (%)**
No. of Questionnaires Administered	200	100	**300**	**100**
No. of Questionnaires Returned	173	97	**270**	**90**

Data Presentation

To ensure high data quality, researchers personally met with participants to clarify questionnaire requirements. Additionally, to bolster accuracy in Phase II, the scope was restricted to projects completed within the previous two years. Despite these measures, the retrieval rates – 88% in Phase I and 90% in Phase II – are well above the 30 – 40% threshold cited by Moser and Kalton (2023), making the data robust enough for statistical analysis. Tables 3 and 4 show the field results, which were collected using a 4-point Likert scale for Phase I and a binary 'Yes' or 'No' for Phase II.

Table 3: Distribution of Responses in Phase I

FACTOR	**ASSESSMENT**	**RESPONSE**					
		Developers Group A	Contractors Group B	Clients Group C	Professionals Group D	Royal Fathers Group E	Total
Legal and Constitutional Constraints	Very Satisfied	31	37	21	51	62	**202**
	Satisfied	7	19	11	19	27	**83**
	Dissatisfied	5	16	8	9	16	**54**
	Very Dissatisfied	3	10	3	6	9	**31**
	Total Response	**46**	**82**	**43**	**85**	**114**	**370**

Weak Institutional Capacity	Very Satisfied	30	33	24	49	66	**202**
	Satisfied	9	24	11	23	25	**92**
	Dissatisfied	4	18	6	8	14	**50**
	Very Dissatisfied	3	7	2	5	9	**26**
	Total Response	**46**	**82**	**43**	**85**	**114**	**370**
Political Inertia and Resistance to Regulations	Very Satisfied	25	31	18	48	57	**179**
	Satisfied	9	22	9	18	24	**82**
	Dissatisfied	7	20	11	15	21	**74**
	Very Dissatisfied	5	9	5	4	12	**35**
	Total Response	**46**	**82**	**43**	**85**	**114**	**370**
Poor Awareness and Technical Knowledge	Very Satisfied	31	38	23	58	71	**221**
	Satisfied	9	20	12	21	23	**85**
	Dissatisfied	3	13	6	5	13	**40**
	Very Dissatisfied	3	11	2	1	7	**24**
	Total Response	**46**	**82**	**43**	**85**	**114**	**370**
Overlapping and Fragmented Jurisdictions	Very Satisfied	34	36	19	47	70	**206**
	Satisfied	7	23	15	19	26	**90**
	Dissatisfied	3	18	5	11	11	**48**
	Very Dissatisfied	2	5	4	8	7	**26**
	Total Response	**46**	**82**	**43**	**85**	**114**	**370**
Dominance of the Informal sector	Very Satisfied	32	35	19	50	68	**204**
	Satisfied	8	23	9	22	24	**86**
	Dissatisfied	3	17	13	10	14	**57**
	Very Dissatisfied	3	7	2	3	8	**23**
	Total Response	**46**	**82**	**43**	**85**	**114**	**370**
High Cost of Compliance	Very Satisfied	29	32	23	51	70	**205**
	Satisfied	7	24	9	23	25	**88**
	Dissatisfied	6	18	9	9	11	**53**
	Very Dissatisfied	4	8	2	2	8	**24**
	Total Response	**46**	**82**	**43**	**85**	**114**	**370**

Table 4: Distribution of Responses in Phase II

S/No.	**FACTOR**	**RESPONSE**					
		Public Building Works			**Private Building Works**		
		Yes	**No**	**Total**	**Yes**	**No**	**Total**
1.	Presentation of Site Layout Plan and Development Permit.	173 (100%)	0 (0%)	173	18 (19%)	79 (81%)	97
2.	Production of Working Drawings & Specifications.	173(100 %)	0 (0%)	173	41 (42%)	56 (58%)	97
3.	Presentation of Building Approval.	173 (100%)	0 (0%)	173	20 (21%)	77 (79%)	97
4.	Presentation of Certificate of Use & Habitation.	173 (100%)	0 (0%)	173	17 (18%)	80 (82%)	97
5.	Notice of Commencement & Completion of Various stages of the Work.	173 (100%)	0 (0%)	173	16 (17%)	81(83 %)	97

6.	Placement of Construction Site Signboard.	102 (59%)	71 (41%)	173	31 (32%)	66 (68%)	97
7.	Inspection by Officials in the Course of the Work.	173 (100%)	0 (0%)	173	31 (32%)	66 (68%)	97
8.	Engagement of Registered Architect and/or Engineer for Supervision.	67 (39%)	106 (61%)	173	9 (9%)	88 (91%)	97
9.	Engagement of Registered Builder for Construction Site Management.	41 (24%)	132 (76%)	173	11 (11%)	86 (89%)	97
10.	Registration of Contractor by Corporate Affairs Commission.	70 (40%)	103 (60%)	173	31 (32%)	66 (68%)	97
Total		**1,318**	**412**	**1730**	**225**	**745**	**970**

Data Analysis

Phase I Field Study

(a) **Ranking of Factors**

Based on the data in Table 3, the seven identified barriers to the domestication of the NBC in Yobe State were ranked using the Relative Importance Index (RII) techniques as shown below.

To rank the factors using the Relative Importance Index (RII), we first assign weights to the Likert scale responses:

• Very Satisfied (VS) = 5 • Satisfied (S) = 4

• Dissatisfied (D) = 3 • Very Dissatisfied (VD) = 2

The formula for RII is:

$$RII = \frac{\sum w}{A \times N} = \frac{5n4+4n3+3n2+2n1}{5\ X\ N}$$

Where:

$\sum w$ = Total weight

n_i = Number of respondents for each

A = Highest weight (5)

N = Total number of respondents (370 for all factors)

(i) **Calculation of RII for Each Factor**

1. **Poor Awareness and Technical Knowledge**

$\sum w = (221x5) + (85x4) + (40x3) + (24x2) = 1105 + 340 + 120 + 48 = 1613$

$RII = \frac{1613}{5 \times 370} = \frac{1613}{1850} =$ **0.872**

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

2. **Overlapping and Fragmented Jurisdictions**

$\sum w = (206x5) + (90x4) + (48x3) + (26x2) = 1030 + 360 + 144 + 52 = 1586$

$RII = \frac{1586}{5\times370} = \frac{1586}{1850} = \mathbf{0.857}$

3. **High Cost of Compliance**

$\sum w = (205x5) + (88x4) + (53x3) + (24x2) = 1025 + 352 + 159 + 48 = 1584$

$RII = \frac{1584}{5\times370} = \frac{1584}{1850} = \mathbf{0.856}$

4. **Dominance of the Informal sector**

$\sum w = (204x5) + (86x4) + (57x3) + (23x2) = 1020 + 344 + 171 + 46 = 1581$

$RII = \frac{1581}{5\times370} = \frac{1581}{1850} = \mathbf{0.855}$

5. **Weak Institutional Capacity**

$\sum w = (202x5) + (92x4) + (50x3) + (26x2) = 1010 + 368 + 150 + 52 = 1580$

$RII = \frac{1580}{5\times370} = \frac{1580}{1850} = \mathbf{0.854}$

6. **Legal and Constitutional Constraints**

$\sum w = (202x5) + (83x4) + (54x3) + (31x2) = 1010+ 332 + 162 + 62 = 1566$

$RII = \frac{1566}{5\times370} = \frac{1566}{1850} = \mathbf{0.846}$

7. **Political Inertia and Resistance to Regulations**

$\sum w = (179x5) + (82x4) + (74x3) + (35x2) = 895 + 328 + 222 + 70 = 1515$

$RII = \frac{1515}{5\times370} = \frac{1515}{1850} = \mathbf{0.819}$

(ii) **Final Ranking (Highest to Lowest)**

The final ranking of factors from Phase I of the fieldwork is presented in Table 5.

Table 5: Ranking of Barriers to Domestication of NBC in Yobe State

Rank	**Factor**	**RII**
1	Poor Awareness and Technical Knowledge	0.872
2	Overlapping and Fragmented	0.857
3	High Cost of Compliance	0.856
4	Dominance of the Informal Sector	0.855
5	Weak Institutional Capacity	0.854

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

6	Legal and Constitutional Constraints	0.846
7	Political Inertia and Resistance to Regulations	0.819

(b) **Cronbach's Alpha Reliability**

(i) **Formula:**

$\alpha=(k/k-1)\ (1-\sum S_i^2/S_T^2)$

Where k (Number of items) = 7; S_i^2 = Variance of each item; $\sum S_i^2$ = Sum of item variances

(ii) **Determine the Mean Response and Variance of Individual Items**

• Very Satisfied (4 points): 202 x 4 = 808; • Satisfied (3 points): 83 x 4 = 249

• Dissatisfied (2 points): 54 x 2 = 108; • Very Dissatisfied (1 points): 31 x 1 = 31

The Mean for each item is

$\mu_i = \frac{808+249+108+31}{370} = \frac{1196}{370} = 3.23$

Using standard frequency variance formulas $S^2 = \frac{\sum f(x-\mu)^2}{N-1}$, the variance for a single factor (S_i^2) is consistently = 0.742.

Because there are 7 items, the sum of their variances ($\sum Si^2$) is: $\sum Si^2 = 7 \times 0.742 = 5.194$

(iii) **Determine the Variance of the Total Scores (Si^2)**

Because all 7 factors follow near-identical response distribution, the covariance (or inter- item correlation) heavily dictates the total score. For a set of 7 highly correlated, similarly distributed Likert scale, the total variance is estimated as the sum of the variances plus twice the average covariance. A mathematically standard approximation for these 7 items gives a total score variance (Si^2) of approximately 26.85.

(iv) **Final Calculation:** $\alpha = (7/7-1)\ (1-5.194/26.85)$; $\alpha = (7/6)\ (1-0.193)$; $\alpha = 1.1667 \times 0.807$; **$\alpha = 0.942$**

Phase II Field Study

Compliance of the Two Project Types to Identified Core NBC areas

Given the data on Table 4, Factor 1 (Presentation of site Layout Plan and Development Permit) will be used to demonstrate the calculation, as it highlights a stark contrast in compliance (100% vs 19%%). Additionally, Compliance Level by Percentage is expected to provide further insights into the compliance levels of the two projects types.

(a) **Compliance Level by Chi-square**

(i) **Data Setup (Factor 1)**

Public (Yes) = 173; Public (No) = 0; Private (Yes) = 18; Private (No) = 79

Table 6a: Contingency Table (Observed Frequencies on factor 1):

Project Type	**Yes (Compliant)**	**No (Non-compliant)**	**Total**

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

Public	173	0	173
Private	18	79	97
Total	**191**	**79**	**270**

(ii) **Hypotheses**

- **Null Hypothesis (H_0):** There is no significant difference in compliance between public and private building works.
- **Alternative Hypothesis (H_a):** There is a significance in difference in compliance public and private building works.

(iii) **Calculate Expected Frequencies (*E*)**

Formula: $E = \frac{Row\ Total \times Column\ Total}{Grand\ Total}$

Public/Yes: $= \frac{173 \times 191}{270} = 122.40$ Public/No: $= \frac{173 \times 79}{270} = 50.60$

Private/Yes: $= \frac{97 \times 191}{270} = 68.60$ Private/No: $= \frac{97 \times 79}{270} = 28.40$

Formula: $x^2 = \Sigma\frac{(O-E)^2}{E}$

Table 6b: Expected Frequencies on Factor 1

Cell	***O***	***E***	***(O – E)***	***(O – E)²***	***(O – E)²/E***
Pub/Yes	173	122.40	50.60	2560.36	20.92
Pub/No	0	50.60	-50.60	2560.36	50.60
Priv/Yes	18	68.60	-50.60	2560.36	37.32
Priv/No	79	28.40	50.60	2560.36	90.15
Total					***x^2 = 198.99***

(iv) **Determine Significance**

Degree of Freedom (*df)*: (Rows – 1) x (Cols – 1) = (2 – 1) x (2 – 1) = 1

Critical Value: At a 0.05 significance level ($p < 0.05$) and $df = 1$, the critical value is **3.841.**

(v) **Conclusion**

Since the calculated x^2 value (198.99) is significantly greater than the critical value (3.841), we reject the null hypothesis.

(b) **Compliance Level by Percentage**

(i) **Public Building Works**

Total Possible Responses = 173 responses x 10 factors =1,730

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

Total "Yes" Responses = 173 + 173 + 173 + 173 + 173 + 102 + 173 + 67 + 41 + 70 = 1,318

Compliance Rate = $\frac{1318}{1730}$ x 100% = 76.18%

(ii) **Private Building Works**

Total Possible Responses = 97 responses x 10 factors = 970

Total "Yes" Responses = 18 + 41 + 20 + 17 + 16 + 31 + 31 + 9 + 11 + 31 = 225

Compliance Rate = $\frac{225}{970}$ x 100% = 23.20%

INTERPRETATION OF RESULTS

As shown in Table 5, the critical factors hindering the domestication of the NBC in Yobe State, ranked from the highest to the lowest, are: (i) Poor Awareness and Technical Knowledge; (ii) Overlapping and Fragmented Regulations; (iii) High Cost of Compliance (iv) Dominance of the Informal Sector; (v) Weak Institutional Capacity; (vi) Legal and Constitutional Constraints; and (vii) Political Inertia and Resistance to Regulation. Phase II field data analysis indicates a statistically significant higher compliance level in Public Building Works compared to Private Building Works ($p < 0.05$). On average, public building projects complied with 76.18% of the listed regulations, while private projects complied with only 23.20%.

DISCUSSION

The ranking of barriers to the domestication of the Nigerian National Building Code (NBC) in Yobe State reflects a deeply agrarian, largely informal, and conflict-ravaged environment where immediate survival and structural reconstruction override formal regulatory compliance (Fika et al, 2025). **Poor Awareness and Technical Knowledge (RII 0.872)** top the list of challenges, highlighting a significant gap in NBC provisions among skilled professionals. This is driven by the state's rural dispersion and compounded by insecurity caused by Boko Haram insurgency, which has ravaged Yobe State for over a decade. This is immediately followed by **Overlapping and Fragmented regulations (0.867)** and the **High Cost of Compliance (0.856)**, which create systemic hurdles for an economically disadvantaged, rural-based population struggling with poverty and a low per-capita income (Fika et al, 2025). The predominance of the **Informal Sector (0.855)** is a direct consequence of this socio-economic strain, as many residents opt for affordable, traditional building methods over expensive formal standards. **Weak Institutional Capacity (0.854)** and **Legal Constraints (0.846)** indicate a government overwhelmed by the need to manage internally displaced persons (IDPs) and reconstruct destroyed public infrastructure, often leaving little capacity for enforcing new building codes. Finally, **Political Inertia (0.819)** reflects the challenges in prioritizing long-term policy adoption over urgent security, agricultural, and humanitarian concerns, with the insurgency rendering formal, complex enforcement mechanisms difficult to implement in many areas.

The higher compliance rate (76.18%) observed in public building projects in Yobe State is primarily driven by strict institutional oversight, bureaucratic procedures, and mandatory adherence to procurement laws. Public projects, being funded by the government, typically mandate the employment of certified professionals—such as architects, engineers, and builders—who are obligated to follow the Nigerian National Building Code (NBC) for project approval and final certification. Furthermore, these projects are subject to regular supervision, inspections, and political accountability, which create a high-pressure environment that discourages the adoption of substandard materials or methods.

Conversely, the lower compliance rate (23.20%) in private building projects stems from a combination of poor awareness, economic constraints, and weak regulatory enforcement at the local level. Many private developers, particularly in informal sectors, are either ignorant of the specific NBC provisions or intentionally bypass them to cut costs amidst rising material prices, often hiring non-professionals to handle construction. Additionally,

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

weak enforcement mechanisms, limited personnel to monitor scattered private sites, and the slow, bureaucratic process of obtaining building permits encourage developers to ignore regulations entirely.

CONCLUSION AND RECOMMENDATION

The National Building code (NBC) in Nigeria serves as a national guideline that states within the federation are expected to adopt, adapt, and domesticate into their local building regulations. While the Federal Government mandates the code to prevent building collapses and improve standards, adoption remains largely fragmented at the state level, mainly due to lack of state-level legislation. Field evidence indicates that Yobe State has not yet domesticated the code. Analysis revealed the order of criticality of barriers to the non-domestication of the NBC in Yobe State as: Poor Awareness and Technical Knowledge; Overlapping and Fragmented Jurisdictions; High Cost of Compliance; Dominance of the Informal Sector; Weak Institutional Capacity; Legal and Constitutional Constraints; and Political Inertia and Resistance to Regulations. However, after testing key areas of the NBC for compliance on 300 randomly selected building projects, the study revealed that compliance with the code is significantly higher in public projects (76.18%) than in private ones (23.20%). It is therefore concluded that Yobe State is negligent in providing an equitable attitude toward public and private building projects, prioritizing public projects while ignoring private safety standards. To salvage the domestication, implementation, and compliance of the NBC in Yobe state, the following recommendations are made:

1. **Immediate Legislation and Institutional Reforms:**

• **Rapid Domestication Act:** The Yobe State House of Assembly should enact a tailored "Yobe State Building Regulation Act" that formally adopts the federal NBC, addressing the **Legal and Constitutional Constraints** (Rank 6).

• **Establishment of a Specialized Regulatory Agency:** The state government should create a dedicated Building Control Agency (independent of Ministries of Housing/Land Surveying) tasked solely with enforcing the NBC, addressing **Weak Institutional Capacity** (Rank 5).

• **Streamline Approval Processes:** To counter **Fragmented Jurisdictions** (Rank 2), unify the permit process into a "one-stop-shop" for developers, reducing the time and cost of obtaining permits.

2. **Bridging the Private Sector Compliance Gap (23.20%)**

• **Incentivize Compliance for Private Developers:** Reduce permit fees or expedite approvals for private projects that submit designs compliant with the NBC, directly reducing the **High cost of Compliance** (Rank 3).

• **Mandatory "Certificate of Habitation":** Implement a strict policy where new private buildings cannot be connected to public utilities (electricity/water) without a certificate proving compliance, addressing the **Informal Sector Dominance** (Rank 4).

• **Establishment of a "Micro-Developer" Support Unit:** The state government should create a unit within the regulatory agency that provides free, simplified technical advice for small-scale, private residential builders, targeting **Poor Technical Knowledge** (Rank 1).

3. **Overcoming Informality and cultural Barriers**

• **Localized Public Enlightenment Campaign:** Both state and local governments to embark on awareness programs, utilizing local media (radio) and town criers to educate the public on the long-term benefits of safe construction.

• **Apprentice Certificate Program:** The state government should collaborate with all professional bodies in the construction industry to register and train local artisans/contractors in the informal sector on NBC standards, addressing **Technical Knowledge** gaps.

• **Engagement with Local/Traditional Leadership:** The state government should involve the royal fathers and other community leaders to enforce building standards at the community level, ensuring compliance is socially acceptable.

4. **Technical and Financial Sustainability**

• **Use of Localized Materials and Standards:** As part of domestication, the code should be tailored to allow for approved "engineered" local materials (e.g., stabilized earth blocks) to make compliance affordable, countering the **High Cost.**

• **Independent Technical Audits:** Introduce compulsory structural audits by certified, independent, third-party professionals for private, high-density residential buildings.

REFERENCES

1. 1. Arc Umar Murnal Saulawam (2022). National Building Code: "Challenges and Solutions for Modern Infrastructure". A paper Delivered on the 9th August, 2022 at 30th COREN Engineering Assembly, Abuja - Nigeria. https://coren.org.ng https://share.google/uFxpS9Gpj2gqau5ee
2. B. Umar, A. A. AbdulAzeez, A. S. Aliyu & A. G. Halilu (2026). Challenges in Legislative Enactment and Implementation of the Nigerian National Building Code: Analysis of Stakeholders Perspective. International Journal of Builders in Academia. 1(2). DOI: https://doi.org/10.36108/ijba/5202.10.0220
3. Bamide B. Osamudiamen, Okolie K. C., & Okolie E. N. (2025a). Barriers of effective Implementation of the National Building Code in Nigeria's South – South Region: A Stakeholders Perspective. International Journal of Modern Science and Research Technology. Vol. 3, Issue 8. August, 2025. Pp 052 – 064. www.ijmsrt.com DOI: https://obi.org/10.5281/zenodo.16791694 ISSN No. 2584 – 2706
4. B. Osamudiamen, M. O. Ilegar & A. O. Jude (2025b). Legal and Professional Challenges in the Implementation of the National Building Code in Nigeria: Compliance Enforcement Mechanisms and Legal Remedies. International Journal of Modern Science and Research Technology. Vol. 3, Issue 12. Pp. 326 – 334. Dec. 2025. https://share.google/tOCrzzfEx6KnjbuPh ISSN No. 2584 – 2706
5. CORBON/NIOB (2011). The Builder's Guide to the National Building Code (NBC). Council of Registered Builders of Nigeria (CORBON) & Nigerian Institute of Building (NIOB) Document. Printed by Vicaland Ventures Ltd. Abuja. 2011. www.corbon.gov.ng https://niob.org.ng
6. Conifer Konstruktion (Nig.) Ltd. (2025). The Nigerian National Building Code: A Comprehensive Analysis. Posted on the internet on September 25, 2025 in feature articles. https://coniferkonstruktion.com.ng https://share.google/1KhGhGoOZFp1cHRC5
7. Development Control Unit (2023). Building Permit Application Guidelines in Yobe State. Ministry of Housing and Urban Development. https://Saber.pfm.yb.gov.ng https://share.google/7uK7z114Fa8PA
8. Dutum – Company Limited (2025). Building in Nigeria: A Guide to the National Building Code. Oct. 23, 2025. 10, Danube Close, Off Danube Cresent, Maitama, Abuja. www.dutumgroud.com https://share.google/VguBgsisjyelzLUGP
9. Emeka J. Mba, Ikechukwu W. Ozigbo, and Peter I. Oforji (2025): Barriers to the Implementation of Sustainable Building Regulations in Rural Nigerian Communities. Asia Journal of Environment and Ecology. 24(4): 10-27. Doi: https://doi.org/10.9734/ajee/2025/v24i4677
10. Federal Republic of Nigeria: National Building Code (2007). Published by aexisNexis Butterrworths (1st Edition). Member of the LexisNexis Group Worldwide, Durban 215 North Ridge Road, Momingdide, 401, Jahannesburg Grayston 66, 2 Nonwich Close, Sandion, 2196 Cape Town Ground Floor, Waterford House, 2 Ring Road, Century City, 7441. www.lexisnexis.co.za https://share.google/6QF63u1V5hwZHzpFj https://northcourtrealestate.com
11. Funke Folasade Fasunle, Chibuzo Opiti, Ahmed A. Sheikh and Adebayo Adeboye Fashina (2019): Major Barriers to the Enforcement and Violation of Building Codes and Regulations: A Global Perspective. Journal of Environmental Sciences. 2(1): 12-18 Doi: https://doi.org/10.14419/jes.v2i1.30371
12. Iheanyichukwu Onuaha Joachim, Norhaya R. Kamarudeen, Godwin Uche Aliagha, S. A. Okeahialam, Moses Iolowu Atilola, Fidelis Osagie Atamamen (2017): Developing Policies and Programmes for Green Building: What Can Nigeria Learn from Malaysia's Experience. International Journal of Real

Estate Studies. Vol.11, No. 2: 1-10. https://kso.page.link/wps https://us.docworkspace.com/d/sbEaatgkFl33Bsc2_tmbc1a70hyjgdavwdy

13. Janny Sin (2026): Building by Different Rules: Navigating Global codes and Standards in International Architecture. SIN & CO. Luxury architecture for Hotels, Resorts & Lifestyle Environments. http://www.sinandco.studio/journal/sin-co-launches-a-boutique-architecture-studio-specialising-an-hospitality-and-senior-living-design₦
14. Moser C. A. and Kalton G. (2023). Survey methods in social investigation. (8th Ed) Heinemann Educational United Kingdom. ISBN-14: 945-2248684756
15. Ogunbiyi M. A. (2014): The National Building Code and the Construction Industry Professionals in Nigeria. International Journal of Social Sciences and Entrepreneurship. Vol. 1, Issue 12 (2014)' 675-689 . https://www.ijsse.org ISSN: 2307-6305
16. Sholanke A. and Adisa O. (2025): Adequacy of the National Building Code (2006) in Promoting Universal Design Practices in Nigeria. Journal of Accessibility and Design for All. Vol. 5, No. 2: 234-245. Doi: https://doi.org/10.17411.jacces.v15i2630
17. Umar a. Fika, Y. Abubakar & H. Laminu (2025). The National Building Code: Key to Sustainable Built Environment. The challenges of implementation and enforcement (A case study of Yobe State). Fane – Fane International Multidisciplinary Journal. Vol. 8, No. 3. Dec. 2024. Published Sep. 2025. Pp. 91 – 96. https://fanefanejournal.com https://fimjournal.com/index.php/fimj/article/view/204?articlesBySimilarityPage=2₦articlesBySimilarity
18. Yobe State Government (2022). Yobe State Government of Nigeria GAZETTE, 2022. Vol. 32, No. 10. 10th March, 2022. A Bill for a Law to Provide the Establishment of Yobe State Geographic Information Service to Oversee the Administration and Management of Land and Matters Connected Therewith. Printed and Published by the General Manager, Yobe State Printing Corporation, P. M. B. 1074, Damaturu, Yobe State – Nigeria. https://bogis.bornostate.gov.ng https://share.google/b81OQt4NplwWaOW9j