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Research article

Private Residential Development and Building-Regulation Compliance in Itigidi, Cross River State, Nigeria Evidence on Awareness, Approval and Enforcement Capacity

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ABSTRACT

Objective: This study evaluates respondent-rated compliance with building regulations among residential developers in Itigidi, Cross River State, Nigeria, and examines awareness, approval status, perceived enforcement constraints and neighbourhood variation. **Method:** A 2020 cross-sectional survey produced 371 usable questionnaires from 388 distributed copies. Questionnaire evidence was triangulated with interviews, field observation and Itigidi Area Planning Authority records for 2010–2020. Descriptive statistics were reproduced, and the exploratory one-way ANOVA was recalculated from aggregated neighbourhood counts. **Results:** In the overall archived table, 20.5% rated compliance as good, 35.6% as fair and 43.9% as poor. Most respondents reported no knowledge of the regulation (59.8%), no building approval (51.5%) and discomfort with the extent of compliance (85.7%). Weak enforcement was the leading perceived explanation (49.1%), followed by absence of penalties (35.6%). A separate neighbourhood table yielded inconsistent category totals and was analysed only for its spatial pattern and original ANOVA. The ANOVA was non-significant, $F(2, 12)=1.552$, $p=.252$, but does not establish neighbourhood equivalence. **Implications:** Policy should prioritise guidance, accessible permitting, risk-based inspections, staffing, mobility and auditable records. **Contribution:** The article explains how regulatory knowledge, approval practice and enforcement capacity intersect in a Nigerian town with comparable constraints.

KEYWORDS

Building regulation; Development control; Private developers; Compliance; Planning approval; Enforcement capacity; Itigidi; Nigeria

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Introduction

Building regulations are intended to establish minimum requirements for the location, design, construction and use of buildings. Their public purpose is not limited to architectural appearance. They support structural safety, ventilation, access, sanitation, fire protection, environmental quality and the orderly relationship between buildings, roads, drainage channels and property boundaries. Development control translates these requirements into operational decisions through plan scrutiny, permits, site inspection, enforcement notices and, where authorised, sanctions. A regulation therefore has practical value only when its requirements are understandable, administratively accessible and consistently applied. In many rapidly changing settlements, the central policy problem is not the absence of rules but the distance between formal standards and routine development practice.

Nigeria has a long history of town-planning and building-control instruments, yet empirical studies repeatedly report uneven implementation. Arimah and Adeagbo (2000) found that awareness of planning regulations in Ibadan did not necessarily produce compliance, and that setbacks, plot coverage, room dimensions, utilities and changes of use were among the commonly violated requirements. Later studies similarly associated weak compliance with limited institutional capacity,

fragmented administration, outdated or poorly adapted standards, affordability constraints and low public confidence in planning agencies (Aluko, 2011; Ojo-Fajuru & Adebayo, 2018; Ogbonna et al., 2017; Osuizugbo, 2019). These explanations should not be treated as interchangeable or universally causal. Their relevance depends on the settlement, the regulatory authority, the type of development, the resources available to developers and the quality of evidence used to measure compliance.

The need for locally specific evidence is especially important in secondary towns, where planning authorities may cover large territories with few staff, limited mobility and incomplete records. Metropolitan studies dominate the Nigerian literature, but regulatory conditions in smaller towns can differ substantially. Informal tenure arrangements, family-owned housing, incremental construction and long-established neighbourhoods may affect how residents encounter formal approval procedures. At the same time, secondary towns are not exempt from the consequences of poorly coordinated development. Insufficient setbacks, encroachment on circulation space, inadequate sanitary separation and unrecorded building activity can constrain future infrastructure provision and increase the cost of upgrading. These outcomes are plausible planning risks; they should not be equated automatically with demonstrated structural failure or measured health damage unless those outcomes are directly assessed.

Itigidi is a riverine town in Abi Local Government Area of Cross River State. The source study was designed to assess compliance with the Cross River State Building Regulation of 1984, as amended in 1987, which was the benchmark used by the researcher in 2020. The study considered selected requirements relating to approved building plans, building lines, setbacks, plot coverage, ceiling height, room dimensions, floor level, ventilation, space around buildings and corridor width. It also examined whether residents knew that the regulation existed, whether their buildings had planning approval, why developers were perceived not to comply, and what capacity the Itigidi Area Planning Authority possessed to enforce development control.

This article reconstructs the study as a journal manuscript and deliberately adopts more defensible terminology than the archived project. The principal outcome is described as respondent-rated compliance because the dataset reports the categories good, fair and poor from questionnaire responses. Although the fieldwork also included observation and measurement, the archived results do not provide a building-by-building audit score for each statutory requirement. Accordingly, the percentages reported here should not be interpreted as engineering certification, a structural-safety assessment or a complete legal determination of each property. Similarly, respondents' explanations for non-compliance are treated as perceived constraints, not proven causal effects.

The study has four objectives. First, it describes the distribution of respondent-rated compliance across five Itigidi neighbourhoods. Second, it assesses reported awareness of the regulation and reported planning-approval status. Third, it identifies the explanations most frequently selected for non-compliance and documents the enforcement setting described by the local planning authority. Fourth, it interprets administrative approval records for 2010–2020 without assuming that recorded approvals equal the total volume of construction. The article contributes a transparent reanalysis of an under-reported secondary-town dataset and develops policy implications that remain within the limits of the available evidence.

Literature review

Building-control systems combine substantive standards with procedures. Substantive standards specify what is required, while procedures determine how plans are submitted, reviewed, approved, inspected and enforced. Osuizugbo (2019) argues that effective practice depends on clear obligations, competent staff, public enlightenment, plan scrutiny, inspection and reliable record keeping. This institutional view is useful because it moves analysis beyond the simple claim that developers either obey or disobey rules. Compliance is produced through interaction: standards must be technically appropriate; applicants must understand them; approval channels must be usable; inspectors must have authority and resources; and sanctions must be credible and proportionate. Failure at any point can weaken the regulatory chain.

A second issue is regulatory fit. Arimah and Adeagbo (2000) emphasised that planning standards should reflect prevailing social and economic conditions if they are to be feasible and publicly legitimate. This does not mean that safety requirements should be abandoned for low-income households. It means that authorities should distinguish essential risk controls from procedural burdens that add cost without clear public benefit, and should provide realistic pathways through which incremental developers can obtain guidance and approval. Ojo-Fajuru and Adebayo (2018) similarly frame development control as a mechanism for protecting public space and improving urban quality, but their argument also implies that enforcement must be accompanied by planning services, not reduced to demolition or punitive action.

Evidence from Nigeria shows that knowledge and compliance are related but not identical. A person may know that planning rules exist while lacking access to professional drawings, land documentation, finance or a responsive approval office. Conversely, a person may obtain approval but depart from the approved plan during incremental construction. Aluko (2011) reported uneven public compliance with spatial standards in Lagos, while Ogbonna et al. (2017) found low compliance in parts of Abia State and linked the pattern to planning capacity and the availability of current land-use plans. These studies support the inclusion of awareness, approval status and enforcement conditions as separate variables. They do not justify treating awareness alone as a sufficient explanation for behaviour.

Local institutional capacity is therefore central. Development-control work requires staff time, transport, site information, legal documentation and an auditable sequence of decisions (Ajom et al., 2024; Ajom, 2022). Where a planning authority has few officers and no reliable mobility, inspection coverage is likely to be selective. The resulting gaps may reduce the probability that contraventions are detected, but the present study cannot estimate that probability because it lacks inspection logs and a census of active construction sites. A defensible analysis can document staffing and respondents' perceptions of weak enforcement, then identify the additional evidence required for a causal conclusion. This distinction is important because perceptions can be accurate, partially accurate or influenced by personal experience.

The broader southern Nigerian literature also shows why spatial governance matters beyond the permit office. Eneyo and Ekpenyong (2018) demonstrated the relevance of location and spatial distribution in assessing petrol filling stations in Calabar South. More recent studies have examined clustering and distance-decay in urban food-service patronage, tourism support services and environmental management, and conservation-related livelihood transitions in the Cross River Basin (Eneyo, 2026a, 2026b; Eneyo et al., 2026). Although these studies address different sectors and do not provide evidence about building-regulation compliance in Itigidi, they reinforce a common analytical point: the location, concentration and governance of human activities shape environmental and socioeconomic outcomes. The present article applies that spatial-governance perspective to residential development without implying data overlap among the studies.

Tourism and entrepreneurial development studies in Cross River State further illustrate the dependence of local economic activity on service infrastructure, environmental quality and institutional coordination (Eneyo et al., 2023; Eneyo & Archibong, 2024). Introductory texts on environmental science and tourism similarly situate land-use management, environmental quality and service provision within sustainable development (Eneyo, 2025a, 2025b, 2025c). These sources are used here to frame the policy context, not to substitute for direct evidence on compliance. The Itigidi dataset remains the sole empirical basis for the article's numerical findings.

Three local dissertations provide additional but non-duplicative context. Enya (2019) examined makeshift housing and reported environmental-service deficiencies among low-income residents in Obudu. Etim (2021) developed a GIS-oriented approach to development-plan approval and monitoring in Calabar, while Bassey (2025) analysed long-term land-use and land-cover change in Calabar Metropolis. These studies concern different settlements, samples, dates and outcome measures. They are therefore used only to situate the Itigidi evidence within wider housing, urban-growth and planning-information challenges in Cross River State; none supplies numerical evidence for the present findings.

A third issue concerns measurement. Compliance can be measured through physical audits, plan-to-building comparisons, administrative records, professional assessments or self-report. Each method captures a different dimension. Physical measurements may show whether a setback or room dimension meets a stated threshold; records show whether an approval exists; and self-report reveals knowledge, perceptions and experience. A single categorical question asking whether neighbourhood compliance is good, fair or poor provides a useful overview, but it cannot identify which statutory provisions were violated or the severity of each violation. For that reason, this article uses the term respondent-rated compliance and triangulates it with approval status, awareness, discomfort, interviews, observation and registry counts.

The conceptual framework adopted here treats observed regulatory performance as the product of four interacting domains. The first is regulatory knowledge: whether developers know that rules and approval requirements exist. The second is procedural access: whether applicants can obtain plans, submit documents and receive decisions at acceptable cost and time. The third is enforcement capacity: staffing, transport, inspection, record management and credible sanctions. The fourth is development context: tenure, age of the building stock, household resources and incremental construction. The dataset does not allow estimation of the independent effect of each domain. It does, however, allow a structured assessment of whether several warning indicators occur together and whether the policy response should focus only on punishment or on the entire compliance pathway.

The literature gap is therefore both geographical and methodological. There is limited published evidence from Itigidi, and few studies distinguish carefully between perceived compliance, documented approval and objectively measured conformity. By retaining those distinctions, the article avoids a stronger conclusion than the data support. It asks not whether every building in Itigidi is legally compliant, but what the 2020 survey and available records reveal about residents' assessments, knowledge of regulation, approval status, perceived enforcement constraints and the volume and composition of recorded approvals.

Methodology

The research used a cross-sectional survey design supported by interviews, direct observation and administrative records. The study population was described in the archived project as residents of Itigidi town. A 1991 population of 7,475 was projected to 13,455 for 2019 using an annual growth rate of 2.8%. The projection is reported as part of the original sampling frame and is not presented as a current official population estimate. The researcher applied the Yamane finite-population formula with a 5% precision level and obtained a minimum sample of 388. A total of 388 questionnaires was distributed, of which 371 contained usable responses, giving an analytical response rate of 95.6%.

Questionnaires were randomly administered to household heads or adult respondents described in the source as private developers and occupants. The instrument contained closed and open questions on sex, age, marital status, occupation, education, income, perceived neighbourhood compliance, knowledge of the building regulation, planning approval, housing tenure, age of building, comfort with the level of compliance, perceived reasons for non-compliance and the agency responsible for development control. The questionnaire introduction stated that the exercise was for academic purposes and that responses would be treated confidentially. Interviews were conducted with staff of the Itigidi Area Planning Authority, and field observation considered visible development conditions, including setbacks and building lines.

The statutory reference framework in the source document included ten provisions: an approved building plan; a building line of at least 12 metres from the road centre; a minimum ceiling height of 2.88 metres; a minimum 4.5-metre separation between a bungalow and another building; maximum plot coverage of 50%; a minimum living-room area of 12.96 square metres and width of 3.00 metres; a ground-floor level at least 0.15 metres above adjacent ground; window area not less than one-eighth of floor area for ventilation; a 1.5-metre minimum space from non-road property boundaries; and a corridor width of at least 1 metre. The archived results do not report an itemised audit for these ten provisions. They are therefore treated as the normative background to the respondent ratings, not as ten independently verified outcomes.

Five neighbourhoods were represented in the compliance table: Lekpachel, Evalche, Ikamine, Agba and Ebin-Ebol. Respondents selected one of three categories—good, fair or bad—to describe the level of compliance in their neighbourhood. In this article, bad is rendered as poor for consistency of academic wording, with the underlying counts unchanged. The awareness item is reported as knowledge of the existence of the regulation. Planning approval is based on the respondent's answer to whether the building had town-planning approval. Comfort is based on whether the respondent was comfortable with the extent of compliance. The reasons for non-compliance were mutually exclusive response categories in the archived table: lack of awareness, weak enforcement and absence of penalties.

Descriptive analysis reproduced frequencies and percentages from the source tables. Percentages were checked by dividing each category count by 371 and multiplying by 100. For analytical clarity, selected demographic categories were consolidated in Table 1; all consolidated values are sums of the original categories. Neighbourhood row percentages in Table 3 were newly calculated from the original counts. Administrative records for 2010–2020 were analysed by building type. Dashes in the source table were treated as zero. The original total column contained arithmetic inconsistencies for 2013 and 2015; the figure therefore plots the reported component counts directly, rather than relying on those printed yearly totals.

A second internal inconsistency affects the compliance tables. The archived overall table reports 76 good, 132 fair and 163 poor responses, whereas the neighbourhood table sums to 110 good, 150 fair and 111 poor responses; both tables total 371. Respondent-level records were unavailable for reconciliation, so no category was reassigned. The overall table is used for the headline compliance proportions, while the neighbourhood table is analysed separately for within-neighbourhood patterns and to reproduce the original ANOVA. Results from the two tables are not pooled or treated as interchangeable.

The archived project tested neighbourhood variation using a one-way analysis of variance. The test treated the five neighbourhood counts within each compliance category as observations: good = [21, 13, 31, 22, 23], fair = [32, 21, 37, 18, 42], and poor = [12, 25, 32, 23, 19]. Recalculation reproduces the source result, $F(2, 12)=1.552$, $p=.252$. This procedure is

retained to preserve the original finding and make it reproducible. It is interpreted cautiously because the inputs are aggregated cell counts rather than independent respondent-level continuous measurements. A non-significant result under this specification does not prove that the neighbourhoods are equivalent, and it does not replace a respondent-level multinomial or contingency-table analysis.

The analysis has additional limitations. First, the central compliance measure is perceptual and categorical. Second, the study is cross-sectional and cannot establish temporal or causal relationships. Third, the questionnaire's reliability coefficient and detailed sampling allocation were not reported. Fourth, the administrative series records approvals or applications captured by the planning authority, not the total number of buildings constructed. Fifth, the study did not conduct structural testing, health assessment or a complete georeferenced audit of violations. Finally, the legal and administrative framework may have changed since 2020; conclusions are therefore specific to the data-collection period and the regulatory benchmark used by the source study.

Results and Discussion

Table 1 summarises selected characteristics of the 371 respondents and their housing context. Men represented 52.6% and women 47.4%, a relatively balanced distribution compared with many household-head surveys. Respondents aged 60 years or older formed 38.5% of the sample, while those aged 40–59 accounted for 35.0%. Agriculture and fishing together represented 59.8% of reported occupations. Almost half of respondents held a bachelor's, master's or doctoral qualification (49.1%), yet 59.8% later reported no knowledge of the building regulation. The combination is analytically important: formal educational attainment did not automatically translate into reported regulatory awareness. It would therefore be inappropriate to attribute non-compliance simply to illiteracy.

Table 1. Selected respondent and housing characteristics (n = 371)

Characteristic	Category	Frequency	Percentage
Sex	Male	195	52.6
	Female	176	47.4
Age	20–39 years	98	26.4
	40–59 years	130	35.0
	60 years and above	143	38.5
Occupation	Farming/fishing	222	59.8
	Civil service	56	15.1
	Trading/crafts	93	25.1
Education	No formal/FSLC	99	26.7
	SSCE/GCE	69	18.6
	National diploma	21	5.7
	BSc/MSc/PhD	182	49.1
Monthly income	Below ₦40,000	25	6.7
	₦40,000–₦69,000	78	21.0
	₦70,000–₦99,000	171	46.1
	₦100,000 and above	97	26.1
Housing tenure	Family owned	273	73.6
	Rented	98	26.4
Reported building age	0–20 years	109	29.4
	21–25 years	61	16.4
	26 years and above	201	54.2

The income distribution was concentrated between ₦70,000 and ₦99,000 per month (46.1%), with 26.1% reporting ₦100,000 or more. Because the survey did not collect construction costs, permit costs, household expenditure or income verification, the data cannot establish whether approval requirements were unaffordable. They do, however, show that the sample was not composed exclusively of respondents in the lowest income categories. Family ownership was dominant (73.6%), and 54.2% of respondents lived in buildings reported to be at least 26 years old. This older stock may have been developed under different enforcement conditions or modified incrementally, but the survey does not identify when each

alteration occurred. Policy should therefore distinguish between new construction, extensions to older buildings and inherited properties.

The core regulatory indicators are presented in Table 2. Only 76 respondents (20.5%) rated compliance as good. A further 132 (35.6%) selected fair, while 163 (43.9%) selected poor. Combining fair and poor gives 79.5%, which indicates that favourable assessments were a minority. This is evidence of a perceived compliance problem, but it is not an objective estimate that 43.9% of buildings violate a specific legal threshold. The result is best read as a community-level signal that warrants targeted physical audits.

Table 2. Core compliance, awareness, approval and comfort indicators

Indicator	Response	Frequency	Percentage
Respondent-rated compliance	Good	76	20.5
	Fair	132	35.6
	Poor	163	43.9
Knowledge of regulation	Yes	149	40.2
	No	222	59.8
Planning approval	Yes	180	48.5
	No	191	51.5
Comfort with extent of compliance	Yes	53	14.3
	No	318	85.7

Reported awareness was also limited: 222 respondents (59.8%) stated that they had no idea about the existence of the regulation, compared with 149 (40.2%) who reported awareness. This contrasts with the Ibadan study by Arimah and Adeagbo (2000), where awareness was comparatively high but compliance remained weak. The contrast suggests that Nigerian settlements may occupy different points in the regulatory pathway. In some places, the problem is translating knowledge into compliance; in Itigidi, the dataset indicates that basic knowledge itself was incomplete. The policy implication is not that information alone will solve the problem, but that enforcement without clear prior guidance risks being perceived as arbitrary.

Planning approval was almost evenly divided, although the unapproved category was larger: 191 respondents (51.5%) reported that their building had no approval, while 180 (48.5%) reported approval. Because approval status was self-reported and not linked property-by-property to the authority's registry, the percentage should be treated as an estimate. Even with that qualification, the result points to a substantial gap between the formal approval system and the occupied housing stock. It also helps explain why a purely enforcement-led response may be insufficient. Where half of respondents report no approval, the authority requires an accessible regularisation and guidance strategy alongside inspection.

The comfort item produced the strongest negative response. A total of 318 respondents (85.7%) said they were not comfortable with the extent of compliance, compared with 53 (14.3%) who were comfortable. The source discussion connected discomfort with inadequate setbacks, building lines, sanitary space and boundaries. The questionnaire, however, did not measure indoor environmental quality, morbidity, accident exposure or psychological wellbeing. The defensible conclusion is therefore that respondents expressed dissatisfaction with the residential development condition, not that the study established a quantified health effect.

Table 3. Archived neighbourhood-specific compliance ratings

Neighbourhood	Good n (%)	Fair n (%)	Poor n (%)	Total
Lekpachel	21 (32.3)	32 (49.2)	12 (18.5)	65
Evalche	13 (22.0)	21 (35.6)	25 (42.4)	59
Ikamine	31 (31.0)	37 (37.0)	32 (32.0)	100
Agba	22 (34.9)	18 (28.6)	23 (36.5)	63
Ebin-Ebol	23 (27.4)	42 (50.0)	19 (22.6)	84
Total	110	150	111	371

The archived neighbourhood-specific results are shown in Table 3. Lekpachel and Ebin-Ebol had the largest within-row shares of fair ratings, 49.2% and 50.0% respectively. Evalche had the largest within-row share of poor ratings at 42.4%, followed by Agba at 36.5%. Ikamine, the largest neighbourhood subsample, was more evenly distributed across the three categories. Because Table 3 totals do not reconcile with the overall compliance counts in Table 2, these patterns are interpreted only within the neighbourhood table and are not combined with the headline proportions. They can guide further

audit sampling, but they cannot support a definitive ranking of legal compliance without respondent-level reconciliation and a standardised property assessment.

Table 4. Perceived reasons for non-compliance and reported enforcement setting

Evidence domain	Category/indicator	Frequency	Percentage/record
Perceived primary reason for non-compliance	Weak enforcement	182	49.1%
	Absence of penalties	132	35.6%
	Lack of awareness	57	15.4%
Local enforcement setting	Agency identified by respondents	371	Itigidi Area Planning Authority (100%)
	Staff reported in authority interview	—	3 officers
	Constraints reported in interviews	—	Funding, mobility and staffing limitations

Note. Reason categories are respondent perceptions. Staffing and operational constraints were reported in interviews with the local planning authority.

Respondents' explanations for non-compliance are summarised in Table 4. Weak enforcement was selected by 182 respondents (49.1%), absence of penalties by 132 (35.6%), and lack of awareness by 57 (15.4%). These responses identify perceived institutional weaknesses, but they do not measure actual inspection frequency, sanction probability or the legal adequacy of penalties. Their value lies in showing how the regulatory system was experienced by residents. Nearly half viewed enforcement weakness as the primary explanation, while more than one-third focused on the absence of consequences. This pattern is consistent with literature that links regulatory performance to inspection, plan scrutiny, staff capacity and public communication (Ojo-Fajuru & Adebayo, 2018; Osuizugbo, 2019).

Interviews in the source study identified the Itigidi Area Planning Authority as the sole local agency responsible for development control and reported that only three staff members were available for scouting, contravention and enforcement. The staff also described mobility and funding constraints. These details provide plausible institutional context for the survey perceptions. They do not establish the amount of territory covered per officer, the number of active sites, or the frequency of inspection. Nevertheless, three officers constitute a visibly limited human-resource base for a function that includes public guidance, plan processing, field inspection, records, enforcement and inter-agency coordination.

Table 5. Reproduced exploratory one-way ANOVA

Source of variation	Sum of squares	df	Mean square	F	p
Between compliance-category vectors	208.133	2	104.067	1.552	.252
Within vectors	804.800	12	67.067		
Total	1012.933	14			

Note. The test uses three vectors of aggregated neighbourhood counts and is retained to reproduce the source result. It is not a respondent-level test of neighbourhood equivalence.

The original exploratory ANOVA is presented in Table 5. It compared the mean neighbourhood counts across the three response categories and produced $F(2, 12)=1.552$, $p=.252$. Under the conventional 5% threshold, the test did not reject the null hypothesis specified in the source study. However, the conclusion must be narrower than the original wording. The test indicates that the mean of five aggregated counts did not differ significantly among the good, fair and poor category vectors. It does not demonstrate that compliance rates are spatially uniform across neighbourhoods. The descriptive pattern in Table 3 remains relevant, and future work should analyse respondent-level outcomes with an appropriate categorical model.

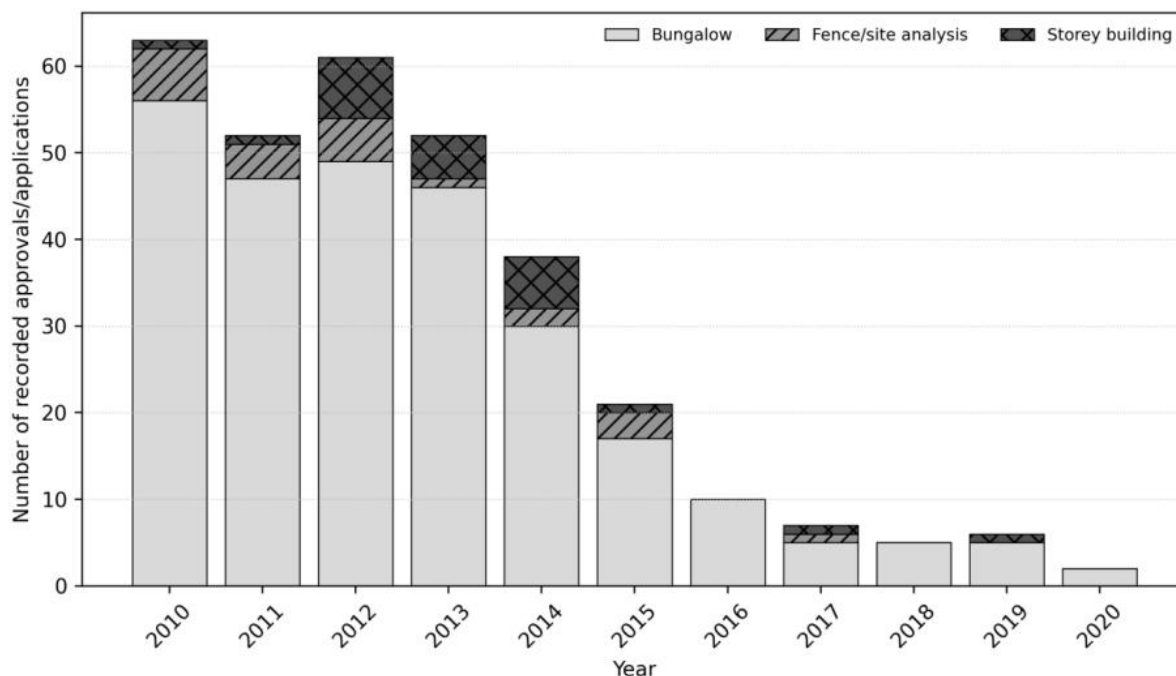


Figure 1. Recorded development approvals and applications by building type, Itigidi Area Planning Authority, 2010–2020.

Source: Recreated from the archived planning-authority records.

Administrative records add a temporal dimension. Figure 1 plots the component counts reported by the Area Planning Authority for 2010–2020. Across the period, the registry contained 272 bungalow entries, 22 fence/site-analysis entries and 23 storey-building entries, a combined 317 entries. Bungalows accounted for 85.8% of the recorded categories. The annual series was highest in 2010 and 2012, then declined markedly after 2014, reaching very low levels between 2017 and 2020. The figure should not be interpreted as proof that construction activity collapsed. A decline in recorded approvals can result from fewer applications, weaker record capture, reduced processing capacity, incomplete archives, economic conditions, construction outside the formal system or a combination of these factors.

The registry trend and the survey approval responses are mutually informative. If a large share of buildings lacked approval and recorded entries declined, the formal planning system may have captured only part of development activity. This is an inference rather than a directly observed ratio because the survey did not match each building to a registry entry and the denominator of total annual construction is unknown. The appropriate policy response is therefore to improve the data system: assign unique application and property identifiers, record submission and decision dates, georeference approved sites, document inspection stages and publish aggregate service statistics. Better records would allow future research to distinguish reduced development from reduced regulatory reach.

Taken together, the evidence supports four findings. First, favourable assessments of compliance were uncommon. Second, reported knowledge of the regulation was limited. Third, slightly more than half of respondents reported no planning approval. Fourth, respondents and authority interviews both pointed to enforcement-capacity constraints. The data do not establish that any single factor caused non-compliance, nor do they quantify the structural or health consequences of particular violations. They do show that knowledge, approval practice, public confidence and institutional capacity were misaligned in 2020. This integrated interpretation is stronger than any isolated percentage because it draws on distinct data sources while preserving their limitations.

The findings also clarify the role of socioeconomic variables. The sample included substantial numbers of older respondents, family-owned properties and long-established buildings. These conditions may affect the feasibility of retrospective compliance, especially where plots and structures predate current administrative practice. Yet the survey did not test associations between these characteristics and compliance at respondent level. Statements that age, income or education caused non-compliance would therefore exceed the evidence. The more defensible conclusion is that the

compliance strategy must recognise heterogeneous property histories and household circumstances rather than impose a single procedural response on all buildings.

The study's local significance extends beyond Itigidi. Spatial studies in Cross River State have shown that the distribution of facilities and services can create environmental and accessibility implications (Eneyo & Ekpenyong, 2018; Eneyo, 2026b). Work on tourism services and riverine livelihoods likewise highlights the importance of environmental management and responsive institutions (Eneyo, 2026a; Eneyo et al., 2026). The present results add residential development control to that regional evidence base. Their contribution is not a claim that all sectors share the same drivers, but that sustainable development depends on institutions capable of linking spatial standards, public information and routine monitoring.

Policy Implications

The first policy priority is to establish a guidance-before-enforcement pathway. The authority should provide a concise public checklist explaining when approval is required, the documents needed, the principal setback and space requirements, expected processing stages, official fees and available appeal or clarification channels. Guidance should be delivered through community meetings, ward-level notices, local radio, professional associations and a simple office help desk. Because 59.8% of respondents reported no knowledge of the regulation, communication should use accessible language and diagrams rather than reproducing legal text alone. Public education should be evaluated through repeated awareness surveys and application data, not assumed to be effective because materials were distributed.

Second, inspection should be risk based. With limited staff, the authority is unlikely to inspect every site at the same frequency. A defensible system would prioritise developments near roads, waterways, drainage corridors, public facilities and other sensitive locations; multi-storey construction; major changes of use; and sites with previous contraventions. Each inspection should record the date, officer, geolocation, stage of work, observations, photographs, notice issued and follow-up outcome. Risk-based inspection is not a relaxation of standards. It is a method of directing scarce capacity towards conditions where non-compliance could produce the greatest public consequence. Third, the permit process should be made auditable and proportionate. Applications should receive unique reference numbers, written acknowledgement and a traceable decision. Basic service standards can specify target times for completeness checks, technical review and communication of deficiencies. For old family-owned buildings, the authority should consider a transparent regularisation route that distinguishes remediable documentation gaps from serious spatial or safety risks. Any regularisation programme should avoid blanket approval; it should require site assessment and clearly identify conditions that cannot be accepted, particularly encroachment on critical infrastructure or hazardous locations.

Fourth, institutional capacity requires more than additional personnel. Staffing, transport, mapping, records, legal support, professional training and operational funding function as a system. Etim's (2021) Calabar study demonstrates the practical value of a geospatial database for development-plan approval and monitoring. A modest Itigidi implementation could begin with a georeferenced application register, parcel identifiers and inspection points rather than an expensive fully integrated platform. The objective should be reliable, updateable information that supports decisions and limits discretionary loss of files. Fifth, monitoring indicators should separate outputs from outcomes. The number of notices issued or demolitions undertaken is an enforcement output; it does not by itself show improved compliance. More informative indicators include the proportion of applications decided within target time, the share of inspected sites conforming at each construction stage, the percentage of notices resolved, the number of buildings regularised after remedial action, and trends in awareness and approval coverage. Publishing aggregate indicators would improve accountability and allow residents to judge whether the authority is providing a service as well as imposing controls.

Regulatory review should involve planners, building professionals, community leaders, property owners and vulnerable residents. The purpose is not to negotiate away essential health and safety protections, but to identify ambiguous provisions, procedural bottlenecks and locally unrealistic requirements. The regional literature on tourism, entrepreneurship and environmental management shows that policies are more likely to support sustainable development when infrastructure, livelihoods and environmental conditions are considered together (Eneyo et al., 2023; Eneyo & Archibong, 2024). In Itigidi, a participatory review can help align public expectations, professional standards and the operational capacity of the planning authority.

Conclusion

This study provides a cautious assessment of building-regulation compliance in Itigidi using 371 usable questionnaires, interviews, field observations and planning-authority records. The available data support a firm conclusion that the local regulatory system was weakly embedded in everyday residential development in 2020. Only one-fifth of respondents rated compliance as good, 59.8% reported no knowledge of the regulation, 51.5% reported that their building lacked planning

approval and 85.7% expressed discomfort with the extent of compliance. Weak enforcement and absence of penalties were the dominant perceived explanations, while the authority was reported to operate with only three staff members.

The evidence does not support stronger claims that all unapproved buildings were structurally unsafe, that a particular socioeconomic characteristic caused non-compliance, or that neighbourhoods were truly identical. The overall and neighbourhood compliance tables contain different category totals and cannot be reconciled without respondent-level records; the overall table therefore supports the headline percentages, while the neighbourhood table supports only its own within-row patterns and the reproduced exploratory ANOVA. That ANOVA, $F(2, 12)=1.552$, $p=.252$, should not be used to infer neighbourhood equivalence. Likewise, declining administrative entries after 2014 indicate reduced recorded activity, not necessarily reduced construction.

A defensible policy response should address the complete compliance pathway: understandable guidance, accessible approval, professional support, risk-based inspection, credible and proportionate enforcement, adequate staffing and mobility, and auditable geospatial records. The immediate research priority is a property-level audit that links permits, physical measurements, building age, location and inspection history. Such evidence would allow the planning authority to move from broad perceptions to targeted remediation. The present article establishes the baseline problem clearly while retaining the boundaries imposed by the original data.

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References

- Ajom, S. K. (2022). Effect of urban infrastructure on residential housing development in Calabar, Cross River State. *Journal*, 28(1), 123–132.
- Ajom, S. K., Ndifreke, M., Ochiche, C., Salihu, A., & Okafor, M. (2024). Magnitude and drivers of land use change in Nsit Ibom Local Government Area of Akwa Ibom State. *World Environment Journal*, 4(1), 10–18.
- Aluko, O. (2011). Development control in Lagos State: An assessment of public compliance to space standards for urban development. *African Research Review*, 5(5), 169–184. <https://doi.org/10.4314/afrev.v5i5.14>
- Arimah, B. C., & Adeagbo, D. (2000). Compliance with urban development and planning regulations in Ibadan, Nigeria. *Habitat International*, 24(3), 279–294. [https://doi.org/10.1016/S0197-3975\(99\)00043-0](https://doi.org/10.1016/S0197-3975(99)00043-0)
- Bassey, V. D. (2020). Assessment of the level of compliance of private developers to building regulations in Itigidi Town, Abi Local Government Area, Cross River State [Unpublished bachelor's project]. Cross River University of Technology.
- Bassey, V. D. (2025). Geospatial analysis of land-use/land-cover changes and environmental implications: A case study of Calabar Metropolis [Master's thesis, Federal University of Technology, Owerri].
- Eneyo, V. B. (2025a). *Environment: An introduction to environmental science*. IDbeyond Printing Press.
- Eneyo, V. B. (2025b). *Essentials of tourism for beginners*. University of Calabar Press.
- Eneyo, V. B. (2025c). *Tourism for beginners II*. University of Calabar Press.
- Eneyo, V. B. (2026a). Tourism support services, environmental management and sustainable destination development in Uyo, Nigeria: Spatial and socio-economic evidence. *Journal of Environmental Sciences and Built Environment Research*, 1(1), 227–240. <https://doi.org/10.83374/jesber.vol1no1.23>
- Eneyo, V. B. (2026b). Where the city eats: Spatial clustering, distance-decay and patronage rhythms of eateries in Calabar, Nigeria. *Journal of Environmental Sciences and Built Environment Research*, 1(1), 1–13. <https://doi.org/10.83374/jesber.vol1no1.2>
- Eneyo, V. B., & Archibong, A. A. (2024). Examining socio-economic implications of tourism development in Nigeria. *World Tourism Journal*, 2(2), 61–82.
- Eneyo, V. B., & Ekpenyong, E. J. (2018). Spatial distribution of petrol filling stations in Calabar South Local Government Area, Cross River State. *Multi-Disciplinary Journal of Research and Development Perspectives*, 7(1), 66–83.
- Eneyo, V. B., Atemgweye, G. I., Imanyi, V. U., & Essien, D. A. (2023). Tourism as a catalyst for entrepreneurial development: Insights from Cross River State, Nigeria. *World Tourism Journal*, 1, 1–19.
- Eneyo, V. B., Onnoghen, U. N., Apeh, C. A., Ajom, S. K.-O., Ugbaka, M. A., Odey, F. I., Odinka, G. E., Effiom, A. F., Atemgweye, G. I., Anake, C. B., & Imanyi, V. U. (2026). Conservation constraints and aquatic livelihood transitions among riverine women in the

- Cross-River Basin, Nigeria. *Egyptian Journal of Aquatic Biology and Fisheries*, 30(3), 3845–3869. <https://doi.org/10.21608/ejabf.2026.486766.7906>
- Enisan, O., & Ogundiran, A. (2014). Implications of urban and regional planning laws on urban renewal projects in Akure, Nigeria. *Journal of Environment and Earth Science*, 4(22), 46–53.
- Enya, K. A. (2019). The role of makeshift structures in housing the urban poor in Obudu Urban, Obudu Local Government Area, Cross River State [Unpublished bachelor's project]. Cross River University of Technology.
- Etim, A. U. (2021). Geographic information systems (GIS): A potential tool in sustainable urban planning, management and monitoring: A case study of Calabar Metropolis [Professional certification dissertation, University of Calabar].
- George, C. K. (2006). Basic principles and methods of urban and regional planning. Libro-Gem Books.
- Lekwot, V. E., Kyom, B. C., & Balasom, M. K. (2013). The nature, scope and dimensions of development control, tools and machineries in urban planning in Nigeria. *International Journal of Innovative Environmental Studies Research*, 1(1), 4–12.
- Nigerian Urban and Regional Planning Law, Decree No. 88 (1992) (Nigeria).
- Oduwaye, L. (2009). Challenges of sustainable physical planning and development in metropolitan Lagos. *Journal of Sustainable Development*, 2(1), 159–171. <https://doi.org/10.5539/jsd.v2n1p159>
- Offiong, V. E., Offiong, R. A., & Ekpe, I. A. (2014). Socio-economic characteristics of property owners and level of compliance with building regulations in Calabar, South-Southern Nigeria. *International Journal of Humanities Social Sciences and Education*, 1(1), 26–32.
- Ogbonna, C. G., Obinka, A. N., & Aguguo, G. U. (2017). Property development and land use planning regulations in Nigeria. *International Journal of Environment, Agriculture and Biotechnology*, 2(4), 1694–1707. <https://doi.org/10.22161/ijeab/2.4.31>
- Ogundele, F. O., Ayo, O., Odewumi, S. G., & Aigbe, G. O. (2011). Challenges and prospects of physical development control: A case study of Festac Town, Lagos, Nigeria. *African Journal of Political Science and International Relations*, 5(4), 174–178.
- Ojo-Fajuru, O., & Adebayo, A. (2018). Development control regulations compliance: Paradigm change to reinvent disrupted public spaces and make future great place in Ado-Ekiti, Nigeria. *Civil Engineering and Architecture*, 6(1), 1–17. <https://doi.org/10.13189/cea.2018.060101>
- Osuizugbo, I. C. (2019). An appraisal of building control and regulations practice in Nigeria: Project managers' perspectives. *Organization, Technology & Management in Construction*, 11(1), 2022–2033.