

Facilities Maintenance and Student Academic Performance in Secondary Schools in Imo State, Nigeria: Procedures, Strategies, and Challenges in a Digital Era

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ABSTRACT

The quality of educational infrastructure is inextricably linked to the standard of teaching and learning outcomes in secondary schools. This article examines facilities maintenance in public and private secondary schools in Imo State, Nigeria, with particular reference to the constraints imposed by economic recession and the opportunities presented by digital-era innovations. Drawing on an empirical study conducted across a stratified random sample of 200 secondary schools (96 public; 104 private) drawn from the population of 597 registered institutions in Imo State, this article analyses the maintenance procedures, options, strategies, and challenges observed in both school categories. Data were generated through a validated Facilities Maintenance Questionnaire (reliability coefficient = 0.84, Cronbach Alpha), with mean, standard deviation, and z-test statistics employed for analysis. Findings reveal that systematic maintenance procedures including structured identification of defective infrastructure, establishment of repair inventories, and maintenance workshops are largely absent in the surveyed schools. Reactive rather than proactive maintenance options dominate practice, while institutional challenges including staff knowledge deficits, poor documentation, inadequate funding, and administrative apathy compound the problem. Significantly, no statistically significant differences were found between public and private schools across all four dimensions. The article advances an ecological systems perspective on educational infrastructure and proposes actionable policy recommendations for state and school-level reform. It concludes that sustainable facilities maintenance requires structural policy commitment, capacity building, and integration of digital maintenance management tools.

Keywords: facilities maintenance, secondary schools, school plant management, educational administration, Imo State, economic recession, digital era

INTRODUCTION

Education occupies a central and irreplaceable role in the social and economic development of any nation. As the principal mechanism through which human capital is built, knowledge transferred, and civic values transmitted, the quality of formal education in a country determines, to a large degree, its development trajectory. This understanding has long been reflected in international development frameworks: the Millennium Development Goals (2005), for instance, explicitly stated that no meaningful development can be achieved in any country without adequate education of its citizens. In Nigeria, as in many developing countries, the aspiration to deliver quality, equitable, and inclusive education continues to confront formidable structural and financial obstacles.

Among the most consequential yet frequently neglected dimensions of educational quality is the state of school physical infrastructure the school plant. Buildings, laboratories, libraries, sports facilities, furniture, and equipment constitute the physical environment within which teaching and learning occur. Research consistently demonstrates that the quality of this environment exerts a measurable influence on student concentration, motivation, health, and, ultimately, academic achievement (Schneider, 2002). The maintenance of these facilities keeping them in safe, functional, and conducive condition is therefore not merely a logistical concern but a pedagogical and developmental imperative.

In the Nigerian context, the challenge of school facilities maintenance has been rendered acutely more severe by the effects of economic recession. The contraction of government revenues during periods of economic downturn reduces the funding available to state-run educational institutions, while simultaneously diminishing the household incomes that support private school fee structures (Odunukwe, 2016). The cumulative effect is a progressive deterioration of school infrastructure at precisely the moment when the state and households have the least capacity to fund remediation. This cycle of deferred maintenance, accelerated decay, and widening resource gaps is a familiar pattern across secondary schools in Nigeria, and Imo State is no exception.

Despite the critical importance of facilities maintenance to educational outcomes, empirical research in this domain particularly research grounded in systematic primary data collection across public and private school sectors remains limited in the Nigerian literature. The study upon which this article is based addresses that gap through a comprehensive survey of 200 secondary school principals in Imo State. This article synthesizes the findings of that survey to construct a scholarly argument about the state of facilities maintenance in Imo State secondary schools, the factors that shape it, and the reforms necessary to improve it in a digital era characterized by new possibilities for infrastructure management.

The article is organised as follows: Section 2 articulates the problem statement; Section 3 presents the research questions; Section 4 reviews relevant theoretical and empirical literature; Section 5 describes the methodology; Section 6 presents the source data and empirical findings; Section 7 discusses the implications of those findings; Section 8 offers policy recommendations; and Section 9 concludes.

Statement of The Problem

Secondary schools in Imo State, like those elsewhere in Nigeria, are established to pursue clearly defined educational goals centred on human capacity building and national development. The realisation of these goals is critically dependent on the availability and functionality of school facilities. However, the fiscal pressures associated with economic recession have progressively eroded the capacity of both the state government and private households to fund the provision and maintenance of school infrastructure.

In the public school sector, annual budgetary allocations to education have declined in real terms during periods of economic contraction, reducing the resources available to school administrators for routine maintenance activities. In the private school sector, household income compression limits the ability of school proprietors to fund facility upkeep from tuition revenue. The consequence, observable across both sectors, is a pattern of reactive rather than proactive maintenance facilities are repaired only when failure is imminent or has already occurred, rather than being maintained preventively to forestall deterioration.

This pattern of facilities neglect carries significant implications for student academic performance and safety. Poorly maintained classrooms, laboratories, and sanitation facilities create environments that are physically uncomfortable, health-compromising, and pedagogically unsuitable. They undermine teacher morale, reduce student attendance, and deprive learners of the hands-on experience with functional equipment that effective science and technical education requires. Yet, despite these demonstrable costs, systematic research documenting the specific maintenance practices and the gaps therein in Imo State secondary schools remains limited. This

article addresses that gap and, on the basis of its findings, argues for urgent, evidence-based reform of school facilities maintenance policy and practice.

Research Questions

This article is guided by the following two primary research questions, derived from the broader empirical study:

1. What maintenance strategies are currently adopted in public secondary schools in Imo State?
2. What institutional, human resource, impede effective facilities maintenance in public secondary schools in Imo State,

LITERATURE REVIEW

The Concept of School Facilities Maintenance

Facilities maintenance in educational institutions refers to the totality of actions taken to preserve the functionality, safety, and aesthetic quality of the school physical plant. Ajayi (2007) defined school plant maintenance as all activities undertaken with a view to sustaining the initial use value of the school plant. This definition encompasses a broad spectrum of activities ranging from basic custodial cleaning to complex structural repairs, and from the periodic servicing of laboratory equipment to the replacement of irreparably damaged furniture.

In the literature on educational administration, several typologies of maintenance activity have been advanced. Agenyi (2012) identified four principal types: routine maintenance, which covers general cleaning, minor servicing, lubrication, and inspection; preventive maintenance, which involves scheduled inspections and service procedures designed to forestall equipment breakdown; fixed-time maintenance, dependent on usage cycles or calendar intervals; and predictive maintenance, which employs digital and analytical tools to forecast equipment degradation and schedule intervention before failure occurs. Each type serves a distinct function within a comprehensive maintenance framework, and their integration is understood to represent best practice (Schneider, 2002).

Maintenance Procedures and Administrative Frameworks

Administrative procedures for school plant maintenance provide the institutional scaffolding within which maintenance activities are planned, prioritised, and executed. Ani (1997) identified four core procedural components: the identification of structures and equipment requiring repair; selection attention (the prioritisation of maintenance tasks according to urgency and resource availability); the establishment of a maintenance workshop capable of handling minor repairs on-site; and the maintenance of a repair inventory documenting the condition and history of all school facilities. Ngoka (2002) underscored the functional importance of these procedures, arguing that they enable administrators to allocate scarce resources rationally between urgent and deferred maintenance needs.

The absence or poor implementation of these procedures has been documented in several Nigerian studies. Agoha (2008), in a study of secondary schools in Okigwe Education Zone, found that emergency and reactive maintenance options dominated practice, with preventive and predictive approaches largely absent. Nhlapo (2009), in a South African context, reached analogous conclusions: the current facilities maintenance practices at schools mainly comprised routine, corrective, and emergency maintenance, implying that facilities maintenance is not an integral component of educational programmes.

Maintenance Strategies and Community Involvement

Effective facilities maintenance requires not only administrative procedures but also strategic frameworks that distribute responsibility across multiple actors within the school community. Amanchukwu and Nwachukwu (2015) argued that all hands must be on deck in maintaining school plant, emphasising the need for a participatory approach that engages teachers, students, and non-teaching staff as active stewards of school infrastructure. Agoha (2008) documented a range of practical maintenance strategies employed in Nigerian secondary schools, including requiring students to pay for equipment damage, designating maintenance and store officers, setting aside dedicated maintenance fees, instituting repair workshops, and assigning teachers responsibility for facilities in their care.

Inyang (2002) situated these strategies within a broader framework of administrative strategy, defining the latter as well-planned series of actions through which available resources are managed for the achievement of stated objectives. From this perspective, school plant maintenance strategies are not merely reactive responses to physical deterioration but expressions of deliberate institutional planning and resource management or the absence thereof. In the digital era, emerging technologies including computerized maintenance management systems (CMMS), Internet of Things (IoT) sensors for real-time equipment monitoring, and cloud-based maintenance documentation platforms offer new possibilities for predictive and proactive maintenance, though their uptake in Nigerian secondary schools remains limited.

Challenges to Facilities Maintenance

The literature consistently identifies a cluster of interconnected challenges that impede effective facilities maintenance in Nigerian and African secondary schools. Akwam (2002) identified lack of qualified and experienced resource staff, absence of adequate technical knowledge, and lack of staff interest in proper facility use as key barriers. Nhlapo (2009) added inadequate funding, absence of maintenance documentation, failure to update maintenance plans, and inaccessible equipment records to this inventory of challenges.

Underpinning many of these operational challenges is the broader problem of economic recession. Odunukwe (2016) documented how the economic contraction experienced by Nigeria reflected in devaluation of the naira, declining government revenues, company closures, and household income reduction translated into reduced government allocations to education and diminished household capacity to fund private school infrastructure. This fiscal environment places school administrators in an impossible position: required to maintain facilities with resources that are systematically insufficient for the task.

Theoretical Framework

This article is informed by two theoretical frameworks. The first is Bronfenbrenner's (1979) Ecological Systems Theory, which posits that the development of individuals including learners is shaped by the nested environmental systems in which they are embedded. Applied to school facilities maintenance, this framework directs attention to the multiple contextual layers classroom environment, school administration, local government policy, national economic conditions that interact to determine the quality of the physical learning environment. Deteriorating school infrastructure is not merely the result of individual administrative failure; it reflects the cascading effects of macro-level economic pressures on meso-level institutional capacities.

The second framework is the Resource Dependence Theory (Pfeffer & Salancik, 1978), which holds that organisations are dependent on external environments for the resources necessary to their survival and functioning. Applied to school plant maintenance, this theory illuminates the vulnerability of secondary schools particularly public schools to fluctuations in government funding and household income. Schools lacking diverse resource bases are exposed to particularly severe maintenance capacity constraints during periods of fiscal

contraction, rendering them dependent on the adequacy of a single, unreliable revenue stream. The theory thus underscores the importance of developing diversified, community-based, and technology-assisted resource mobilization strategies for school plant maintenance.

METHODOLOGY

The empirical study from which this article draws adopted a descriptive survey research design a methodological approach well suited to the systematic description of the characteristics, practices, and perceptions of a defined population (Creswell, 2014). The population comprised all 597 secondary schools in Imo State, encompassing both public and private institutions distributed across the state's senatorial zones.

A stratified random sampling technique was employed to ensure proportional representation of both school types. Applying a 33% sampling fraction to the full population yielded a sample of 200 schools: 96 public and 104 private. The principals of the sampled schools served as the primary respondents, given their central role in school plant administration and their direct knowledge of maintenance procedures, options, strategies, and challenges at their respective institutions.

Data were generated using a structured Facilities Maintenance Questionnaire (FMQ) developed by the researchers and validated by a panel of experts in Educational Management. The instrument employed a four-point Likert-type response scale. Reliability was assessed through the Cronbach Alpha method, yielding a reliability coefficient of 0.84 indicating a high level of internal consistency and confirming the instrument's suitability for data generation (Nunnally, 1978). The questionnaire comprised 21 items distributed across four thematic dimensions: maintenance procedures (items 1–4), maintenance options (items 5–8), maintenance strategies (items 9–14), and challenges to maintenance (items 15–21).

A criterion mean of 2.50 was adopted as the decision benchmark for the four-point scale. Item means at or above 2.50 were interpreted as reflecting agreement or affirmation by respondents, while means below 2.50 indicated disagreement or non-adoption. Mean and standard deviation statistics were used to answer the research questions, while z-test statistics were applied to test the four null hypotheses at the 0.05 alpha level of significance, with a critical value of 1.96 at 198 degrees of freedom. This combination of descriptive and inferential statistics permitted both a substantive characterization of maintenance practices and a rigorous comparative assessment of public versus private school responses.

SOURCE DATA AND FINDINGS

Maintenance Procedures (Research Question One)

Respondents were asked to rate the extent to which four core maintenance procedures were adopted in their schools. The weighted mean scores recorded for all four items fell below the criterion mean of 2.50, as follows:

S/N	Maintenance Procedure	Public X	Private X	Grand X	Remark
1	Identification of structures and equipment needing repair	2.40	2.57	2.49	Disagreed
2	Selection attention	2.34	2.46	2.40	Disagreed

3	Institution of maintenance workshop	2.39	2.49	2.44	Disagreed
4	Establishment of repair inventory	2.35	2.42	2.39	Disagreed

Table 1: Mean scores of responses on maintenance procedures adopted in secondary schools in Imo State. Source: Field Survey Data (Igwebuike & Co., 2023).

Table 1 demonstrates that all four maintenance procedures registered weighted mean scores below the criterion mean of 2.50. Identification of structures and equipment needing repair recorded the highest score (2.49), still marginally below threshold, while establishment of a repair inventory recorded the lowest (2.39). This pattern indicates that systematic maintenance procedures are not meaningfully adopted in secondary schools in Imo State, a finding that has profound implications for the orderly prioritisation and management of maintenance activities.

Maintenance Options (Research Question Two)

Respondents were asked to rate the extent to which four maintenance options were practised in their schools. Three of the four items exceeded the criterion mean:

S/N	Maintenance Option	Public X	Private X	Grand X	Remark
5	Repairing school plant only when need arises	2.61	2.60	2.61	Agreed
6	Repairing school plant after breakdown has occurred	2.52	2.59	2.56	Agreed
7	Periodic inspection and servicing to avoid breakdown	2.48	2.51	2.50	Agreed
8	Periodic checking to detect potential breakdowns in good time	2.47	2.49	2.48	Disagreed

Table 2: Mean scores of responses on maintenance options in secondary schools in Imo State. Source: Field Survey Data.

Table 2 reveals that the dominant maintenance options are reactive: repairing facilities only when need arises (mean = 2.61), and repairing after breakdown has occurred (mean = 2.56). Periodic inspection to avoid breakdown barely met the criterion threshold (mean = 2.50), while periodic checking to detect potential breakdowns fell just below it (mean = 2.48). The profile is one of predominantly reactive maintenance culture, with minimal meaningful investment in preventive or predictive approaches.

Maintenance Strategies (Research Question Three)

Six maintenance strategy items were assessed. Items 11 through 14 exceeded the criterion mean, while items 9 and 10 did not:

S/N	Maintenance Strategy	Public X	Private X	Grand X	Remark
9	Committee charged with facilities maintenance responsibility	2.47	2.51	2.49	Disagreed

10	School maintenance workshop for micro repairs	2.45	2.47	2.46	Disagreed
11	Services of professionals employed for plant maintenance	2.48	2.51	2.50	Agreed
12	Teachers and students encouraged to handle school plant with respect	2.56	2.58	2.57	Agreed
13	Students required to pay for equipment they damage	2.57	2.56	2.57	Agreed
14	Teachers required to account for facilities in their custody	2.52	2.55	2.54	Agreed

Table 3: Mean scores of responses on maintenance strategies in secondary schools in Imo State. Source: Field Survey Data.

Table 3 indicates that the most-practised strategies are relatively informal or consequence-based: encouraging respectful handling of school plant (mean = 2.57), requiring students to pay for damaged equipment (mean = 2.57), and requiring teachers to account for facilities in their custody (mean = 2.54). More formally structured strategies a dedicated maintenance committee (mean = 2.49) and an on-site maintenance workshop (mean = 2.46) are not consistently adopted, suggesting that institutional governance structures for facilities maintenance remain underdeveloped.

Challenges to Facilities Maintenance (Research Question Four)

All seven items measuring challenges to facilities maintenance exceeded the criterion mean, indicating broad agreement that each challenge is present in Imo State secondary schools:

S/N	Challenge	Public X	Private X	Grand X	Remark
15	Staff lack of knowledge and interest in maintenance	2.54	2.56	2.55	Agreed
16	Negligence of administrative roles due to apathy	2.52	2.48	2.50	Agreed
17	Lack of qualified maintenance personnel	2.66	2.70	2.68	Agreed
18	Maintenance activities not documented	2.60	2.61	2.61	Agreed
19	Maintenance plans not updated	2.62	2.57	2.60	Agreed
20	Maintenance staff not properly trained	2.56	2.51	2.54	Agreed
21	Equipment documentation not readily accessible	2.67	2.54	2.61	Agreed

Table 4: Mean scores of responses on challenges to facilities maintenance in secondary schools in Imo State. Source: Field Survey Data.

The most acute challenges identified were: lack of qualified maintenance personnel (mean = 2.68), inaccessibility of equipment documentation (mean = 2.61), absence of maintenance documentation (mean = 2.61), failure to update maintenance plans (mean = 2.60), and poor staff training (mean = 2.54). These findings paint a picture of systemic institutional capacity deficit across both public and private school sectors.

Hypothesis Testing: Public vs. Private School Differences

Z-test analyses were conducted to determine whether statistically significant differences existed between public and private secondary school principals across each of the four dimensions. In each case, the calculated z-value was substantially below the critical value of 1.96 at the 0.05 significance level:

Hypothesis	N (Public)	N (Private)	z-cal	z-crit	Decision
H1: Maintenance procedures	96	104	0.83	1.96	Not Sig.
H2: Maintenance options	96	104	0.20	1.96	Not Sig.
H3: Maintenance strategies	96	104	0.14	1.96	Not Sig.
H4: Maintenance challenges	96	104	0.21	1.96	Not Sig.

Table 5: Summary of z-test results comparing public and private secondary school principals across four maintenance dimensions. Source: Field Survey Data.

All four null hypotheses were retained, confirming that no statistically significant difference exists between public and private secondary school principals in their maintenance procedures, options, strategies, or the challenges they encounter. This convergence across school types is analytically significant, as it suggests that the determinants of poor facilities maintenance in Imo State are systemic rather than sector-specific.

DISCUSSION OF FINDINGS

The findings of this study reveal a pattern of facilities maintenance in Imo State secondary schools that is characterized by procedural deficit, reactive practice, informal strategies, and pervasive institutional challenges a pattern that is broadly consistent across public and private school sectors. Each dimension warrants analytical scrutiny.

The failure to adopt systematic maintenance procedures the administrative scaffolding that enables orderly prioritization and execution of maintenance tasks represents the most foundational finding of the study. In the absence of documented repair inventories, structured identification protocols, and institutional maintenance workshops, school administrators lack the basic informational and organizational tools necessary to manage their facilities rationally. This aligns with Ngoka's (2002) observation that maintenance procedures are essential precisely because resources are always inadequate: without a systematic framework for prioritisation, limited resources are likely to be allocated reactively and inefficiently.

The dominance of reactive maintenance options repairing facilities only when need arises or after breakdown has occurred reflects a maintenance culture that is fundamentally incompatible with the goals of cost efficiency and educational continuity. Schneider (2002) demonstrated that deferred maintenance creates a compounding financial liability: the longer a facility defect goes unaddressed, the more expensive remediation becomes. In a

context of already-constrained resources, reactive maintenance thus generates a paradox: the strategy adopted to cope with resource scarcity accelerates the resource depletion it was meant to mitigate. From the perspective of Bronfenbrenner's (1979) Ecological Systems Theory, this dynamic reflects the destabilizing feedback loops that can emerge when macrosystem economic pressures (recession, budget cuts) degrade the mesosystem institutional capacities (school administration, maintenance staffing) upon which microsystem learning environments (classrooms, laboratories) depend.

The finding that informal, consequence-based maintenance strategies—such as requiring students to pay for damaged equipment and teachers to account for facilities in their custody—are more commonly adopted than formal institutional structures such as dedicated maintenance committees and on-site workshops reveals a reliance on individual accountability mechanisms in the absence of collective governance frameworks. While individual accountability has its place, it is no substitute for institutionalized maintenance planning, budgeting, and execution. Amanchukwu and Nwachukwu (2015) correctly observed that effective school plant maintenance requires the coordinated involvement of all institutional actors, implying the need for formal coordination mechanisms rather than ad hoc individual responsibility.

The challenges dimension of the findings is particularly instructive. The highest-rated challenge—lack of qualified maintenance personnel (mean = 2.68)—points to a human capital deficit that cannot be resolved at the school level alone. Training and deploying qualified facilities maintenance technicians across 597 secondary schools in Imo State requires state-level workforce planning, professional certification programmes, and sustained investment in technical education. Similarly, the challenges of poor maintenance documentation and inaccessible equipment records—which in the digital era are readily addressable through basic Computerised Maintenance Management Systems (CMMS) available at low cost suggest that schools are not benefiting from the digital transformation that has transformed facilities management practice in more resourced contexts (Agyei, 2012).

The absence of statistically significant differences between public and private school sectors across all four dimensions challenges any assumption that private school management advantages automatically translate into superior facilities maintenance outcomes. This convergence can be explained through the lens of Resource Dependence Theory (Pfeffer & Salancik, 1978): when both public and private institutions are constrained by the same macroeconomic conditions declining government revenue, compressed household incomes the sector-level distinctions in governance and management that typically differentiate them are overwhelmed by shared resource scarcity. The implications for policy design are significant: interventions must address system-level resource constraints, not merely school-level management practices.

POLICY IMPLICATIONS AND RECOMMENDATIONS

The findings of this study carry several important implications for educational policy and practice at the state, school, and community levels.

First, the Imo State Ministry of Education should establish a mandatory School Facilities Maintenance Framework for all secondary schools, both public and private. This framework should specify minimum standards for maintenance procedures, require annual maintenance planning as a condition of school registration renewal, and mandate the maintenance of accessible, up-to-date facility documentation. State inspectorate bodies should be tasked with verifying compliance during routine school inspection visits.

Second, principals should receive targeted capacity-building training in facilities management, including training on the use of low-cost digital tools such as free or open-source CMMS platforms for maintenance scheduling, documentation, and reporting. The integration of facilities management modules into the professional development curricula of school principals and vice principals would institutionalize this capacity across the system.

Third, the state government should explore ring-fenced maintenance budget allocations for public secondary schools, protected from discretionary reallocation during periods of fiscal austerity. In the private school sector, regulators should consider requiring schools to demonstrate minimum maintenance fund reserves as a condition of operating licences. These measures address the resource dependency vulnerability that the study identifies as a root cause of poor maintenance practice.

Fourth, schools should be encouraged and supported by state policy to develop school-community partnerships for facilities maintenance. These partnerships can mobilise parental labour, local enterprise expertise, and community philanthropy in support of school infrastructure, reducing dependence on state and fee revenue alone. Parent-Teacher Associations (PTAs), alumni networks, and community development committees represent underutilised resources in this regard.

Fifth, in the digital era, the Imo State Secondary Education Management Board (SEMB) should invest in a centralised digital platform for school plant asset tracking and maintenance reporting. Such a platform would enable the Board to monitor the condition of school facilities across the state in near real-time, prioritise state-level maintenance interventions according to evidence-based need assessments, and build a longitudinal database of school plant conditions that can inform capital planning decisions.

Sixth, workshops and seminars on maintenance culture should be organised regularly for principals, teachers, non-teaching staff, and student leaders. Building awareness of the economic and pedagogical costs of deferred maintenance—and equipping school community members with practical skills for basic preventive maintenance—can foster a culture of shared stewardship that complements formal institutional mechanisms.

CONCLUSION

This article has examined the state of facilities maintenance in secondary schools in Imo State, Nigeria, through a rigorous analysis of empirical data generated from a stratified random sample of 200 school principals. The findings document a maintenance landscape characterised by procedural absence, reactive options, informal and consequence-based strategies, and a dense cluster of institutional, human resource, and documentation challenges a landscape that is strikingly uniform across both public and private school sectors.

The theoretical frameworks employed Bronfenbrenner's Ecological Systems Theory and Pfeffer and Salancik's Resource Dependence Theory illuminate the systemic nature of these challenges. Poor facilities maintenance in Imo State is not primarily the product of individual administrator failure or sectoral mismanagement; it reflects the cascading effects of macroeconomic resource constraints on institutional capacities that were never robustly developed to begin with. The digital era offers genuine opportunities to improve maintenance documentation, monitoring, and planning at low cost but realising these opportunities requires deliberate policy investment and capacity building, not merely the existence of available technology.

The practical stakes of improving facilities maintenance are high. School buildings in disrepair, laboratories without functioning equipment, and sanitation facilities in poor condition impose real costs on students in terms of health, safety, learning experience, and, ultimately, academic achievement. Sustainable improvement in Nigeria's educational outcomes cannot be achieved without commensurate improvement in the physical environments within which education is delivered. The reforms proposed in this article a mandatory maintenance framework, ring-fenced budgets, digital asset management tools, community partnerships, and capacity building offer a practical and financially achievable pathway toward that improvement.

Future research should investigate the direct relationship between specific facilities maintenance conditions and measurable student academic performance indicators in Imo State, employing multi-level modelling approaches that account for the nested structure of students within classrooms, classrooms within schools, and schools within

local government areas. Longitudinal studies tracking the effects of targeted maintenance interventions on both facility condition and student outcomes would further strengthen the evidence base for policy investment in this critical and underexplored domain.

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