Kontagora International Journal of Educational Research (KIJER) ISSN: 3027-0618
Volume 3, Issue 1, March 2026
https://fuekjournals.org/index.php/kijer

Assessing Principals' Perception and Attitudes towards Sustainable Management of Infrastructure in Nigeria Secondary Schools

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DOI: https://doi.org/10.5281/zenodo.19410943

Abstract

This study examined "Assessing Principals' Perception and Attitudes towards sustainable Management of infrastructure in Nigerian Secondary Schools". Based on the enormous importance of school infrastructure the researcher undertook to find out if principals' perception and attitude influence their management of the infrastructure in schools The study was limited to Abia State. The research design was the descriptive survey. Purposive sample of 265 secondary school principals was used for the study. A 12-item structured questionnaire with a Cronbach Alpha reliability coefficient of 0.83 was used for data collection. Mean was used for data analysis. Findings showed that the perception of the principals on the management of school infrastructure is positive considering the enormous importance of these infrastructure in schools to both teachers and students in teaching and learning. This observation came from principals' agreement that they always supervise the use of infrastructure in schools to see they are used appropriately, always advise teachers to use the available infrastructure while teaching and see the infrastructure as one of the solutions to the problems of teaching In consequence the researcher recommended that all the principals in Nigeria schools should see the management of their schools infrastructure as one of the key responsibilities of their official portfolio, Principals should form positive attitude to the procurement, making available to teachers the infrastructure and supervising their use and storage for longevity. Adequate budgetary provisions should be made for schools to tackle the problems of infrastructural decay in schools.

Key words: Perception, Attitude, Sustainable, Management, Infrastructure

Introduction

In every country in the world, education is a business that requires both initial and ongoing investment. Any formal education system's viability, continuity, and longevity are largely dependent on its foundation staff, curriculum, infrastructure, and management staff's caliber. A school must have a solid and long-lasting infrastructure base in order to attract public trust and confidence regarding the safety of its achievement of their children in the school, If unfortunately, these facilities are not maintained on regular basis, they may be quickly destroyed by weather and other factors that may not be natural too or man-made, making education costly and challenging to implement (Onyekwelu, 2023).

School infrastructure refers to the physical and organizational structures and facilities essential for the proper running of the school for the successful achievement of educational objectives (Usen, *et* al, 2019). They consist of anything that facilitates instruction, learning, and educational opportunities (Abdulahi, 2018). In a broader sense but not exhaustive, they include the school buildings, laboratories, libraries, offices and staff rooms, lighting and ventilation fittings; the sanitary facilities like clean water supply, toilet and hand washing related facilities for staff and students; technology infrastructure like computers and related accessories; sporting facilities like the football pitch, courts for indoor and outdoor sports; safety, teaching and learning facilities and administrative facilities (Hanum, *et al*, 2018). These facilities are consumed and wear out over time as a result of use, human destruction or the gradual decay as a result of the effects of weather thereby attracting the need for regular maintenance for sustainable use in future.

The following are some of the reasons why principals should ensure proper maintenance of school infrastructure. One is to ensure the safety and security of students, teachers, and other school personnel. Accrding to Elfina, *et al.* (2022) poorly maintained buildings, broken furniture, faulty electrical fittings and systems and damaged facilities can pose serious risks, leading to accidents and injuries. Regular maintenance helps to identify and fix potential hazards, thereby creating a safe learning environment. In another study Rina, *et al.* (2024) said that another reason for the maintenance of infrastructure is to promote effective teaching and learning. For them, a well-maintained school environment with adequate lighting, ventilation, and functional facilities enhances students' concentration and academic

performance. Conversely, dilapidated structures and uncomfortable learning conditions can negatively affect teaching efficiency and students' learning outcomes.

Maintenance of school infrastructure according to Matindas, *et al* (2025) is also to help in protecting school assets and investments. Educational facilities require substantial financial resources to build and equip. Without proper maintenance, these facilities may deteriorate and quickly decay, leading to costly repairs or replacements. By maintaining infrastructure regularly, principals ensure their longevity and optimal use. In addition, proper maintenance reduces operational costs and supports effective budget management. Preventive maintenance allows school principals to address minor issues before they grow into major problems that would require significant financial expenditure. This helps schools to utilize their limited funds more efficiently.

Furthermore, *Iqlima, et al.* (2024) averred that maintaining infrastructure ensures the smooth operation of school activities. Functional facilities such as classrooms, water supply systems, toilets, and electricity are essential for the day-to-day running of the school. When these facilities are in good condition, disruptions to academic and administrative activities are minimized giving room for greater achievements. Another reason is to ensure compliance with government policies and educational standards. Schools are required to meet specific safety, health, and environmental regulations. Proper maintenance enables principals to meet these standards and avoid penalties or possible closure of the school. Maintenance also promotes the health and well-being of students and staff. Clean and well-maintained facilities reduce the spread of diseases, improve air quality, and create a conducive environment for learning. This, in turn, reduces absenteeism and enhances productivity (Matindas, *et al* (2025).

Moreover, a well-maintained school improves the image and reputation of the institution. For this reason Nisa, *et al*. (2024) said that Neat and functional facilities create a positive impression on parents, visitors, and the community. It also boosts the morale of teachers and students, encouraging pride and a sense of belonging. Finally, Hafuza,(2025) concluded by saying that maintaining school infrastructure supports co-curricular and extracurricular activities. Facilities such as sports fields, laboratories, and assembly halls must be in good condition to enable students to participate in activities that promote their physical, social, and emotional development.

Infrastructure, whether educational or not, is destroyed by a combination of natural and man-made factors. These include weather, natural forces, and human activity (through wars, urbanization, and the construction of structures with flimsy foundations that eventually collapse). Weather and climatic factors can impact on educational infrastructure in a variety of ways. According to Johari, *et al.* (2019), these include the wearing away by erosion, the gradual deterioration of plants such as sports areas, defacing of painted buildings, creation of hunger through draught, and ~~the~~ discomfort of study areas due to extreme heat or cold. The climate effect is the most hazardous of these elements because of its slow and undetectable effects.

According to National Aeronautics and Space Administration (NASA) (2024) the interplay of the elements of weather and human activities affect things exposed to weather which gradually corrode and decay. Together, landslides, wind, flash floods, avalanches, land subsidence, long-term humidity, severe heat, drying impacts, and subsurface and subterranean water movement imperceptibly demolish school infrastructure. In actuality, the severe weather variability in the harmattan and the microclimate shift between the rainy and dry seasons seriously damage school infrastructure. In the words of Onyekwelu (2023) building wood shrinks, field grasses dry up, athletic arenas and school farms are attacked by wildfires, and occasionally school buildings are destroyed.

Climate is one of the factors that decay and destroy school infrastructure. The climate of a place is determined by its average weather over a lengthy period of time, ranging from 30 to 35 years or more (Usen, *et al* 2019). Climate can also be described as a longer-term, more consistent weather pattern and less fluctuating environmental conditions. The cumulative and averaged weather records of a location over a long period of time are used to determine its climate. In effect, Intergovernmental Panel on Climate Change (IPCC, 2022) defined climate as the long term pattern, especially temperature, cloud, rainfall and wind over decades or longer. The gradual changes taking place on these element of is known as climate change. According to Food and Agricultural Organization, an arm of the United Nations Organization (UNO), the strength and feel of the environmental state at any given time vary due to these elements' shifting behaviours (FAO, 2017).

Man does a lot of things to help him adjust to the conditions that these weather factors have gathered. Since all of these take time and money, UNICEF (2024) has pushed for climate change education. The

harsh reality, according to UNICEF, is that more than 100 million children in Nigeria are currently impacted by climate change. According to Hanum, *et al.* (2018), the consequences include the destruction of school buildings, which prevents children from attending school, drought, which results in a shortage of food, which keeps students hungry, severe flooding that washes away roads, and the destruction of sports facilities. The complete process of making sure that the infrastructure is put up in accordance with the established criteria for its proper use and prompt reporting of any damage or need for replacement is known as infrastructure development. Frequent maintenance and inspections support their long-term viability and application for the stated goals. *Dora, et al,* (2010) asserted that maintenance is essential to the sustainability and lifespan of any infrastructure. Infrastructure has to be inspected on a regular basis. Iron surfaces are protected against rust by being oiled as soon as they are cleaned. According to Hanum et al. (2018), all school infrastructure should have a regular maintenance schedule since this will keep them under constant observation and protection. The distance between students' tables and chairs should be adequate to prevent crowding in the classroom and subsequent seat damage as students move around the room.

Heads of schools are responsible for overseeing the school's infrastructure. As observed by Mohammed, *et al.* (2021) the federal government provides for federal secondary schools and universities; states handle state owned secondary schools and local governments manage basic education. The creation and execution of educational policies as well as the administration and oversight of educational establishments within their states fall within the purview of the state-level education ministries. In particular and through the activities of head teachers and principals the education ministry is in charge of maintaining all public primary and secondary schools (Mohammed, *et al*., 2021). On behalf of the government and the ministry, school principals are in charge of managing facilities in schools by ensuring their proper use and storage, upkeep, reporting any damage, and replacements as required (Abubakar, 2016). As a result, their opinions objectively provide first-rate information on any developments pertaining to school infrastructure.

Principals' commitment to infrastructural maintenance is a function of perception and attitude among other things. Attitude is a person's psychological disposition by which the person evaluates someone or a thing positively or negatively. According to Tormala, et al. (2025) attitude is a relatively enduring

and general evaluation of an object, person, group, issue, or concept on a dimension ranging from negative to positive.

Attitude serves a lot of purposes in human life. These according to (Dolores & Blair, 2019) are knowledge functions, utilitarian (Adjustment) functions, value-expressive functions, ego-defensive function and social-identity function (Added in modern studies). Also the direction of a person's attitude at a time determines what the person does, the degree of seriousness he attaches to it and the sustenance of the behaviour (Dolores & Blair, 2019).

Perception on the other hand is defined in many ways. According to Richard *et al.* (2020) perception is the process of organizing and interpreting sensory information. Perception influence attitude in that it shapes attitude formation,. Positive or Negative perception leads to similar attitudes, it influences attitude through experience, acts as a basis for evaluation and influences attitude change. In effect principals' perceptions and attitude jointly influence their management commitment to infrastructure maintenance.

Statement of the Problem

Infrastructure in schools, most of which are delicate and easily destroyed need to be protected preserved for maximum benefit to be derived from them. The Nigeria people attitude that government property is no one's property has contributed to careless treatment and abandonment of these infrastructure to waste without adequate care and maintenance. State schools are replete with dilapidated buildings with blown out roofs, broken walls, building beams broken with the supporting irons exposed to air corrosion among others. This attitude of neglect exposes the infrastructure not only to atmospheric attack but also wearing away by other agents of environmental degradation. Under such circumstances the benefits derivable from the infrastructure out of long time sustainability and longevity are lost. It also results in economic waste as a result of disuse as well as puts students in danger when such infrastructure is managed without maintenance. These situations need to be avoided. Hence, the views of the secondary school principals who over sea to the well keep of these structures are needed to rethink and plan for their efficient handling and sustenance. Of all the literature reviewed: (Dora, *et al,* 2010), (Abubakar, 2016), (Johari, *et al,* 2019) and Hanum, *et al.*, (2018) none was seen to have dealt with the perception and attitude of secondary school principals on sustainable management of educational Infrastructure in

Nigeria. This thus creates a gap in knowledge; to fill this gap motivated this researcher to embark on this study. The problem of this study therefore, is "to assess the perception and attitude of secondary school principals on the management of infrastructural in their schools for sustainable development in Nigeria?

Research Objectives

The objectives of this study were to:

1. Assess the perception of secondary school principals' on the management of school infrastructure in Nigeria.
2. Assess the attitude of secondary school principals on the management of school infrastructure for sustainable development.

Research Questions

1. What is the perception of secondary school principals on the effects management of school infrastructure in Nigeria?
2. What is the attitude of principals on the management of school infrastructure for sustainable development?

Methodology

This study adopted the descriptive survey design**.** This design adopted simple descriptive because it attempted to describe the perception and attitude of secondary school principals on the management of school infrastructure for sustainable development. Mean was used as statistical techniques to do quantitative description and explanation of the data collected from the principals. The target population for the study was all the secondary school principals in Nigeria. However, the studied population consisted of 265 made up of 75 male principals and 190 female principals in Abia State. The population data used for this study were collected from the Ministries of Education Abia state of Nigeria. A 12-item structured questionnaire titled "Secondary School Principals' Perception and Attitude for Sustainable Management of Educational Infrastructure Questionnaire" (PPASMEIQ) with a reliability coefficient of 0.83 calculated using the Cronbach Alpha reliability method was used for data collection.

The instrument had two sections covering the two research questions. Data collection was done by direct hand delivery using trained research assistants. Each questionnaire item was weighted using the upper boundaries of a 4-point scale of Very Great Extent (VGE) rated 4 Points; Great Extent (GE) rated 3 Points; Low Extent (LE) rated 2 Points and Very Low Extent (VLE) rated 1 Point.

Very Great Extent (VGE) = 3.10 to 4.00; Great Extent (GE) = 2.10 to 3.00;

Low Extent (LE) =1.10 to 2.00; Very Low Extent = 0.00 to 1.00

Results

Results for this study are presented below:

Research Question One: What is the perception of secondary school principals on the effects management of school infrastructure in Nigeria?

Table 4.1: Results of Data Analysed on Principals' Perception on the Management of School Infrastructure in Nigeria

S/N	Items	Mean		Pooled Mean	DEC
		Males	Females		
1	My perception of infrastructure in my school is that they should be protected	3.11	3.06	3.09	VGE
2	I see school infrastructure as inevitable for teaching and learning.	2.94	3.10	3.02	VGE
3	I feel that any damaged infrastructure should be immediately repaired.	2.79	2.77	2.78	GE
4	It is my view that school infrastructure should be inspected regularly to detect faults in them before they grow big.	2.86	2.87	2.87	GE
5	Infrastructure in schools should be regularly updated to avoid obsolescence	2.67	2.77	2.72	GE
6	I see regular use and care of infrastructure as a means of making them sustainable.	2.69	2.66	2.68	GE
	Mean	**2.84**	**2.87**	**2.86**	
	Standard Deviation	**0.17**	**0.17**	**0.17**	

Results of data analysis in Table 4.1 show that the principals agreed to a great extent that they have a positive perception of the management and development of infrastructure in their schools. This was observed from the cluster mean of means of 2.86 (SD=0.17). Also for the male principals the highest response means was observed from items 1which had mean values of 3.11 that fall within great extent. The lowest mean was 2.65 for item 5. For the females the highest mean is 3.09 for item 1 while the lowest mean is 2.68 for item 6.

Research Question Two: What is the attitude of principals on the management of school infrastructure for sustainable development?

Table 2: Results of Data Analysed on the Principals' Attitude on the Management of School Infrastructure for Sustainable Development in Nigeria

S/N	Items	Mean		Pooled Mean	Decision
		Males	Females		
7	Principals of secondary schools are always supervising the use of infrastructure in their schools to see they are used appropriately.	2.65	2.70	2.68	GE
8	Their love for school infrastructure make principals to use their fund to repair spoilt ones	2.72	2.63	2.68	GE
9	I always advise my teachers to use the available infrastructure while teaching	2.62	2.60	2.61	GE
10	I as a principal see good and modern infrastructure as the key to educational growth.	2.56	2.68	2.62	GE
11	I advise Government to stop giving the setting up of school infrastructure to politicians.	2.67	2.65	2.66	GE
12	School infrastructure should be seen as panacea to solving teaching learning problems	2.76	2.73	2.75	GE
	Cluster Mean	**2.66**	**2.67**	**2.67**	
	Cluster SD	**0.07**	**0.05**	**0.05**	

Results of data analysis show that principals strongly agree on their views on the management of school infrastructure for sustainable development in Nigeria. This was observed from the cluster mean of means of 2.67 (SD=0.05). Also for the entire principals the highest response means was observed from

items 12 which had values 2.75 and falls within great extent. The lowest mean was 2.61 for item 9. Also for the males the highest mean is 2.76 for item 12 and the lowest is 2.56 for item 10. For the females the highest mean is 2.73 for item 12 while the lowest is 2.60 for item 9.

Discussion of Findings

The findings of this study show that the principals have positive attitude and perception towards school infrastructure in Nigeria. They believe that these infrastructure should be protected from rainy season to dry season and the harshness of the harmattan wrecking havoc on them and for them to be sustainably used for teaching and learning (Onyekwelu, 2023). They are witnesses to all activities that go on in the school. Since they believe that they are inevitable for teachers' use at work principals work hard to see that they are protected and kept for future use. From the study this researcher observed positive perception of school infrastructure from the teachers as they agreed that the infrastructure should be protected, that they are inevitable for teaching and learning, damaged ones should be repaired immediately, they should be regularly checked and regularly updated and cared for. This finding is in consonance with the statement of Hanum *et al.* (2018) that all school infrastructure should have a regular maintenance schedule since this will keep them under constant observation and protection. In a similar manner, *Dora, et al,* (2010) asserted that frequent maintenance and inspections support their (school infrastructure) long-term viability and application for the stated goals. Thus with positive perception principals become positively motivated to caring for the infrastructure.

The findings of the study also showed that the principals have positive attitude towards the management of infrastructure in schools. The lax behaviour observed in principals' on the maintenance of infrastructure in schools may be as a result of some other factors like poor funding and not perception and attitude. This was made more succinct by Abdulahi, (2018) who said that poor management of these infrastructures many sometimes be as a result of poor funding as government thinks that these infrastructures would last perpetually once erected. Providing money for the maintenance of infrastructure in schools would make the principals to regularly keep their eyes on the infrastructure for spoliations and their subsequent maintenance since they have to account for the money given to them for the maintenance purposes (Mohammed, *et al.*, 2021).

The management of infrastructure in schools is a tasking one. This is because climatic effects on school infrastructure most if the time is imperceptible such that before they are observed great damage may

have been caused. Gully erosion development start with a reel and sheet erosions which are always ignored and which before they attract attention have caused serious damage to the environment (Federal Ministry of Education, 2025). Positive perception and positive attitude to school infrastructure are what the principals require to be positively self-motivate to manage school infrastructure for sustainable development.

Conclusions

Based on this study the following conclusions were drawn:

1. The perception of the school principals on the management of school infrastructure for sustainable development is positive considering the enormous importance of these infrastructure in schools to both teachers and students in the teaching and learning process.
2. The attitude of principals towards school infrastructure is positive. This observation came from principals' agreement that they always supervise the use of infrastructure in their schools to see they are used appropriately, always advised teachers to use the available infrastructure while teaching and to see the infrastructure as one of the panacea to the problems of teaching and learning.

Recommendations

Based on these findings the researcher recommended that:

1. All the principals in schools in Nigeria should see the management of infrastructure in their schools as one of the key responsibilities of their official portfolio
2. Principals should form positive attitude to the procurement, making available to teachers the available infrastructure as supervising their use and storage for longer lasting.
3. Adequate budgetary provisions should be made for schools to tackle the problems of infrastructural decay in school.

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