

Condition of Public Secondary Schools in Rivers State, Nigeria

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Abstract

This study focused on the current maintenance conditions of Public Secondary Schools in Rivers State that were built in the 1970's, causes of poor state of disrepair, stakeholders opinion on the conditions of the schools infrastructure and measures undertaken by government in the past to maintain or improve the public schools infrastructure. To achieve the objectives of this study, 120 questionnaires were designed and 78 were retrieved to collect data from six public schools out of 58 public secondary schools in Rivers State. The field survey comprised officials from the Department of Education, school teachers, principals and parents of students. The data was analyzed using descriptive statistics. The study discovered that there are multiple factors that led to the dilapidation of public schools infrastructure. The major factors include vandalism, overcrowding, neglect, lack of maintenance, incompetent contractors, lack of security, inadequate government intervention, inadequate fund allocated to schools for maintenance works, deferred maintenance, mismanagement of funds, and no sense of ownership by users, teachers, parents and community members. The study also revealed that the building components of the schools are poor with a mean rating of less than 3 (<3). Key informants said that no measure was undertaken by the government in the past to maintain the schools infrastructure. The study proposed a multi stakeholder framework for the proper maintenance of public schools infrastructure. The study recommended that the government should adopt appropriate maintenance strategy to improve the schools and achieve educational sustainability.

Keywords: Maintenance, Condition, Secondary Schools, Rivers State, Nigeria

1. Introduction

Physical infrastructure as it constitutes in any given country accounts for a greater percentage of the country's investment. It is therefore of utmost importance that these infrastructure including buildings be properly maintained if it must achieve its intended purpose. The physical appearance of these buildings and other infrastructure partly make up their initial judgment of the quality of services provided. Maintenance therefore aims at retaining, improving and restoring original design standard of the building, security and safety in order to achieve users' satisfaction. Maintenance work is therefore necessary if the value and aesthetics of the nation's buildings stock is to be sustained (Nduka, 2014).

One of the greatest issues affecting education in different localities of the state is the poor school infrastructure. Infrastructure includes facilities, services and installations needed for the functioning of a community or society, such as transportation and communication systems, water and power lines and public institutions including schools, post offices and prison (Motterf and Parfomak, 2004).

The Rivers State Government owns several public secondary schools at least one or two in each of the local government areas of the state. A typical public-school infrastructure in Rivers State consists of classroom, teachers' quarters, library, laboratories, changing room and the caretaker's house, etc. The school yard has lawns, parking area and trash area. The classrooms consist of movable furniture and black boards, timber doors, steel windows and door frames characterizing the school component. The floors finishing is usually cemented. These components of school infrastructure also include but are not limited to walkways, and drainage, roofs, chimneys, gutters and downspouts, walls, windows, doors, screens, stairways, porches and steps, accessory structures, electrical wiring, painting, sanitation, lighting, plaster, floors, mechanical, heat supply, bathroom ventilation, fire extinguishers, fire alarm system, smoke detectors, ceilings, joinery, play grounds, plumbing, electrical installation, fencing, furniture and loose equipment (Madikizela, 2016).

Most of these schools were built in the 1970's worth billions of naira and have subsequently suffered years of neglect and lack of maintenance. Some have witnessed severe dilapidation and abandonment.

As observed by Rix and Want (2010), buildings are considered dilapidated when they have fallen into deterioration because of neglect, age, impact by natural event, the lack of preventive and corrective maintenance or willful damage. Dilapidated school buildings are characterized with leaking roofs, broken chairs and desk, rough floors, broken windows, blown away roofs, etc(Asiyai, 2012). Dilapidation can be defined as the reduction of building's or infrastructure aesthetic value (Ahmad and Rahman, 2010).

Various studies have portrayed that the educational environment has a vital effect on the outcomes of learning and that better educational achievement is achieved when the environment is conducive for learning (UNICEF, 2003; Financial and Fiscal Commission, 2009, Duyar, 2009 and Nehemiah, 2010)). According to Iyagba (2005) one of the greatest economic and social problems of Nigeria as a nation is the general absence of a maintenance management culture. It is against this background that this study was undertaken to assess the condition of public secondary schools in Rivers State.

1.1 Aim and Objectives of the Study

The aim of this study is to assess the condition of public secondary schools in Rivers State. The objectives are to:

- i) Identify causes of dilapidation of public secondary schools infrastructure in the state.
- ii) Ascertain the stakeholders' opinion of the current condition of public secondary school infrastructure.
- iii) Ascertain measures undertaken by the government to improve the state of public schools infrastructures.

1.2 Description of the Study Area

River State is one of the 36 states of the Nigeria located in the South-South Geo-political Zone of Nigeria in the Niger Delta region. It was created on the 27th of May 1967 with the split of the Eastern Region of Nigeria. It is bounded on the South by the Atlantic Ocean and to the North by Anambra, Imo and Abia States, to the East by Akwa-Ibom State and to the West by Bayelsa and Delta State respectively. According to National Population Commission (2006) Rivers State has an estimated 5,185,400 people over a total area of 11,077km.sq (4⁰45¹N, 6⁰50¹E and Latitude of 4.15⁰N and Longitude of 6.883⁰E).

The study was conducted in six local Government Areas in the Rivers State namely: Obio/Akpor, Tai, Eleme, Khana, Gokana and Etche. Rivers State has twenty-three Local Government Areas with three senatorial districts which include Rivers South East, Rivers East and Rivers West. The scope of this study covered public secondary schools built in the 1970's by the River State Government. The study is limited to public secondary school buildings which by 2018 numbered fifty-eight (58).

2. Literature Review

2.1 Maintenance

No building is maintenance-free, so every structure, heritage or new, requires care to limit deterioration. As a part of construction process, maintenance has an important role to achieve a long life of the constructed building. Building maintenance can be defined as the regular inspection of all parts of building and the execution of work necessary to keep the structure, finishes and fittings in a proper and acceptable state of repair, including decoration both internally and externally (Cripps 1984).

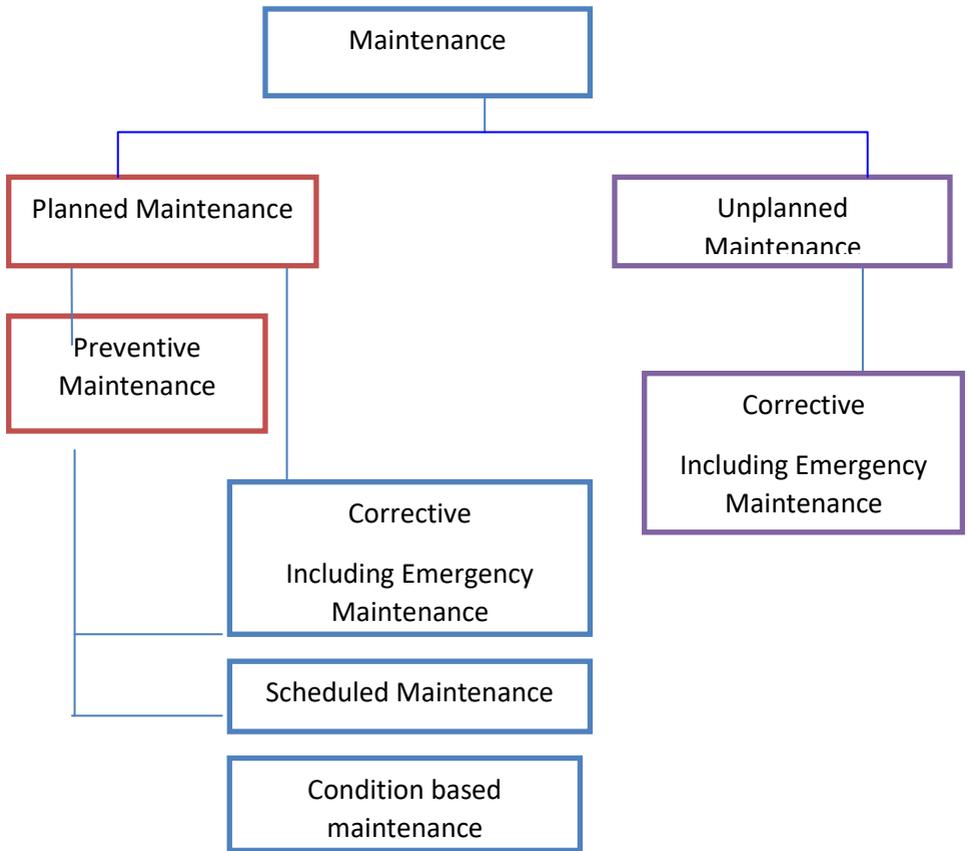


Figure: 2.1: Types of Maintenance
Source: Lee, (1987)

The primary purpose of a school is to promote equitable physical teaching and learning environment (FFC, 2009). A school in a dilapidated condition poses a challenge to the achievement of this goal. (UNICEF, 2003) emphasized that the unexciting and dilapidated schools can be a breeding ground for illiteracy, violence and disease. If the infrastructure is in a poor condition even the teachers cannot deliver the much needed teaching in such condition. Lee (1987)

defines maintenance as the combination of all technical and associated administrative actions planned to retain an item in or restore it to a state in which it can perform its required functions to a satisfactory standard.

There are two types of maintenance: planned and unplanned and two basic methods, preventive and corrective by which the objectives of maintenance can be achieved (Lee, 1987). Maintenance of building can be classified under the following headings:

2.1.1 Unplanned Maintenance

Unplanned maintenance is also known as reactive maintenance, corrective maintenance, breakdown maintenance, or run-to failure maintenance (www.maintenanceassistant.com). Unplanned maintenance occurs in any asset maintenance plan and unfortunately is unavoidable. A common example of these types of maintenance (and the convenience that it can cause) is having your building de-roof by storm, and having to wait for funds to repair it. What trigger this type of maintenance is total breakdown.

Unplanned maintenance is a maintenance work resulting from unforeseen breakdown of facilities requiring urgent attention. It is work resulting from unforeseen breakdown or damage due to external causes such as acts of nature, settlement in buildings and shrinkage of building components (BS 3811:1991, Wood, 2009). It is also categorized as:

- a) Avoidable maintenance
- b) Predictable maintenance

Avoidable maintenance: Wood (2009) defined this as “work required to rectify failures caused by the use of incorrect or faulty materials, incorrect design and incorrect installation” the features of this includes:

- Essential estate management records are obtained.
- Work is organized and therefore controlled.
- Statutory, legal and professional responsibilities are met.
- Direct or correct labour can be used to execute the job.

Predictable maintenance: Wood (2009) also defines this as “Regular periodic work that may be necessary to retain the performance of a product/facility as well as that required to replace or repair the product after achieving a reasonable life span.

2.1.2 Planned Maintenance

BS 4778:1991 cited in Wood (2009) defines planned maintenance as “the maintenance organized and carried out with forethought, control and the use of records to carry out maintenance. Some tasks, such as routine plumbing maintenance, electrical safety checks and certification may be carried out to a regular plan, either annually, quarterly or monthly. Other tasks may merit shorter intervals, such as weekly cleaning of windows, daily floor cleaning or hourly inspection of toilet facilities; others may have longer intervals such as redecoration for every five years or replacement of fittings every 10 to 20 years, all these items may be considered as ‘planned maintenance.

Planned maintenance is further divided into:

- a) Planned Preventive Maintenance (PPM)
- b) Planned Corrective Maintenance (PCM)
- c) Schedule Maintenance
- d) Condition Based Maintenance

2.2 Maintenance of School Buildings and Infrastructure

Ikoya and Onoyase (2008) identified three key problems that required national attention in the education sector. These were (i) provision of infrastructure (ii) maintenance and refurbishment of dilapidated classrooms and (iii) construction of new buildings.

Asiabaka (2008) examined the deficiency of public school infrastructure in Imo State, Nigeria and identified dilapidated floors that need plastering, most buildings with mud walls, without doors and windows and non-availability of sanitary convenience as their major constraint in public schools. It is impossible for anyone to notice that the most widely disappointment in Nigerian public schools infrastructure today is the dilapidated structures.

(i) Provision of Infrastructure

A study conducted by the United Nations Education Committee (2005) indicated that 60 percent of classrooms are not suitable for learning while 90 percent of Laboratories, 68 percent of Libraries, 50 percent of toilets and 45 percent of furniture’s are in bad conditions and need either replacement or refurbishment. Also according to Ikoya and Onoyase (2008), in their study of public school building in Edo State of Nigeria,

found that only 27.3 percent of classrooms were in good condition while 17 schools had classes in the open under trees.

(ii) Maintenance of dilapidated classrooms

Ali (2009) studied cost decision making in building maintenance practice in Malaysia to systematically identify factors considerable in decision making of maintenance cost and performance. The research employed mix-method (qualitative and quantitative) approaches with semi structured interview and questionnaires in Malaysia. The study provides important factors to be considered by building managers to improve effectiveness and accuracy in preparing maintenance budget.

Ajayi and Adeyemi (2011) examined the level of articulation by the Ogun State Government of its UBE policy within the general framework of the scheme in providing facilities for schools. The study also reveals that more deliberate and aggressive provision of these facilities with the influence of positive school performance be achieved. The study also shows the level of commitment to funding and funds utilization in providing these facilities aimed at achieving educational objective through its implementation of the framework.

Bello and Loftness (2010) in their study of addressing inadequate investment in school facility maintenance stated that the physical and environmental conditions were estimated at \$254.6 billion in 2008 due to deferred maintenance of schools in United States and suggested that there is need to implement an effective method for estimating the adequate amount for the maintenance. A new plan value model was developed introducing adequate increase in annual maintenance budgets including necessary resources to address accumulated maintenance backlog, upgrading school facilities to appropriate standard and ensuring health and performance of the occupants.

Asiabaka (2008) carried out a study in Imo state University, Owerri, Nigeria, reviewing the need for effective facility management in schools dealing with the relationship that exists between the quality of school facilities provided and the quantity of the products of the school that will improve the quality of learning and teaching. The paper described the concepts, nature, types of school facilities, need for facilities in schools

and facility management problems. The methodology adopted for the review paper was an archival document analysis. The study suggested methodologies for facilities management and concluded that school facilities give meaning to the teaching and learning process. The study recommended that school managers should carryout comprehensive assessment of the facilities to determine areas of need as this type of assessment will assist in policy formulation as it relates to facility management in schools.

Owolabi et al (2014) assessed the effectiveness of maintenance practices in public schools in Kaduna State, Nigeria. The objectives of the study are : assessing the physical functional condition as carried out by maintenance department; examining the effectiveness of maintenance strategy used in maintaining buildings; determining the prevailing method of executing maintenance works and its efficiency either by direct or contract labour in order to ascertain the direct factors that militate against maintenance. The Survey was the research design adopted. The data was collected from the existing institutions through questionnaires administration and interviews. Mean scores and percentages were used to analyzethe data. The study found that lack of proper phasing of maintenance work can give rise to uneconomical maintenance management practices. The study also found the major problems that lead to inefficiency and ineffectiveness of maintenance management are poor contract management, lack of availability of materials and the incidence of inaccurate estimate.

Uko (2015) studied the principal-ship and effective management of facilities in secondary schools in Cross River State Nigeria. The study assessed the proficiency and creativity of school facilities. The study adopted a cross-sectional survey using both secondary and primary data sources and quantitative and qualitative analysis was used, specifically Pearson Product moment statistical instrument to analyse the data. The study revealed that there is a significant relationship between principal's proficiency, creativity and the overall educational objectives in the management of school facilities. This shows that effective management of school facilities is necessary in creating the enabling academic environment in enhancing a corresponding achievement and performance in the teaching and learning process.

Abdulkareem and Fasasi (2014) focused on the management of educational facilities in Nigeria secondary schools in Illorin, Kwara State, Nigeria. The study suggested that Administrators and inspectors of schools are responsible for effective management of the facilities in order to prevent wastages and ensure achievement of educational objectives since increase in demand for education has exert pressure on existing facilities in schools. The study was a review paper which highlighted the stages in facility management and the functions which could be performed by management of educational institutions in order to achieve effective management of the facilities.

iii. Construction of New Buildings

Asiyai (2012) conducted a study to assess the state of school facilities. The objectives of the study are to: ascertain the state of facilities; types of maintenance carried out; causes of poor maintenance conditions and the roles of managers in the management and maintenance of public schools facilities. The study adopted ex-post –factor research design and used questionnaire for primary data collection. The finding revealed that the school facilities are in a state of disrepair, and maintenance carried out was inadequate. The study also found that the factors responsible poor maintenance condition were excessive pressure on facilities and delay in maintenance among others. The study also indicated that the roles of managers include periodic inspection and decentralized maintenance. The study recommended that all stakeholders should develop and inculcate good maintenance culture and government should budget and allocate adequate fund for the provision and maintenance of school facilities. Adeogun, Osifili and Yaba, (1999) in their study noted that instances where dilapidation is not extreme, public schools facilities were inadequate.

3.0 Research Methodology

The research design adopted in the study was survey design. The population of the study includes key informants of the Ministry of Education, the school principals, school teachers and parents of students in 58 public secondary schools in Rivers State. Six public secondary schools were selected across six local government areas for the study out of the 23 local government areas in the state. The sample size of 120 respondents was selected purposively from the six schools built and equipped in the 1970's and 1980's in the six LGAs. A total

number of 120 questionnaires were generated and 20 questionnaires were administered in each school to the School Principals, Parents of students and School Teachers (both Junior and Senior Secondary schools). Total numbers of questionnaires distributed in the six schools were 120 while 78 were retrieved (see table 4.1). The sampling technique adopted for this study is a non-probability purposive sampling method. The researchers used interview, questionnaire and photographic records to facilitate effective data collection for the study. Secondary sources include books, journals, and on-line materials. The study adopted descriptive statistical tools such as mean, frequency and percentages for data analysis.

4. Results and Discussion

The results of data collected from primary source of data are presented below.

4.1. Number of Questionnaires Administered and Retrieved

Table 4.1 shows the number of questionnaires administered and retrieved in the study areas namely: Government Secondary School, Kpite which was given 20 questionnaires and 15 were retrieved representing 75 percent, Government Secondary School, Eneka was given 20 questionnaires and 12 were retrieved representing 60percent, Government Secondary School Onne equally had 20 questionnaires and out of this number 16 were retrieved representing 80percent, Government Secondary School, Luawi was served 20 questionnaires and 12 were retrieved representing 60 percent, Government Secondary School, Kpor got 20 questionnaires out of which 13 were retrieved and represents 65% and finally Government Secondary School, Okehi also got 20 questionnaires which 10 were returned representing 50% . Total numbers of questionnaires distributed were 120 while 78 were retrieved.

Table 4.1: Number of Questionnaires Administered, Retrieved and Not Retrieved

Location of Schools	Administered		Retrieved		Not Retrieved	
	N	%	N	%	N	%
Government Secondary School Kpite	20	100	15	75	5	25
Government Secondary School Onne	20	100	16	80	4	20
Government Secondary School Kpor	20	100	13	65	7	35
Government Secondary School Luawi	20	100	12	60	8	40
Government Secondary School Eneka	20	100	12	60	8	40
Government Secondary School Okehi	20	100	10	50	10	50
Total	120		78		42	

Source: Field Survey, 2017

4.2 Mean Score of the Factors that Led to the Dilapidation of the Six Schools Infrastructure.

Table 4.2 shows the mean score of causes of dilapidation in the six public secondary schools in Rivers State. Lack of maintenance is the major cause of dilapidation with a mean score of 3.794. This is closely followed by vandalism with a mean score of 3.782 and inadequate funds allocated to schools with 3.764. Others causes include neglect (3.653), deferred maintenance (3.602), funds not allocated based on individual school needs (3.572) and uneven distribution of funds to schools (3.564). The findings revealed that paucity of funds and lack of maintenance culture are main causes of poor maintenance condition of public secondary schools in Rivers state. The study has shown that all the factors listed in Table 4.2 have a considerable high effect on dilapidation of public school infrastructures. It is considered that public Secondary School education is the most effective means that brings about the change that would boost the economic and national development for the country (Asiyai, 2012). One of the greatest issues affecting education in different localities of the state is the poor state of the school infrastructure. Public Secondary Schools in the past used to be institutions of envy to other kind of Secondary Schools; these Secondary Schools were usually of the highest standard of learning environment. The private Secondary Schools on the other hand were more of

an alternative for those candidates who did not meet up with the requirements for public Secondary Schools.

Presently, the reverse is now the case as those public secondary schools' buildings were left to decay and become a shadow of themselves while the private schools kept improving on their infrastructure and academic standards so much that there have been a shift from what we used to have in the past to what is obtainable today.

Hunter (2010) also stated that, it is more likely to find a well maintained schools infrastructure in the private schools for the affluent. The unequal provision of schools facilities has not only been a problem in Rivers State alone but Nigeria as a whole where the less privileged attend classes in dilapidated schools infrastructure, poor equipment and overcrowding. Plates 1 to 5 showed the present condition and the degree of dilapidations in the schools.

Key informant information revealed that corporate organization and NGOs choose to construct new school buildings rather than carrying out maintenance work on the old ones which will still be affected with maintenance problem. Key informant information from the Ministry of Education said that:

Table 4.2: Mean Score of the Causes of Dilapidation

	Causes of Dilapidation	N	Mean	Decision
1	Lack of maintenance	78	3.794	High effect
2	Vandalism	78	3.782	High effect
3	Inadequate funds allocated to schools	78	3.764	High effect
4	Neglect	78	3.653	High effect
5	Deferred maintenance	78	3.602	High effect
6	Funds not allocated based on individual school needs	78	3.572	High effect
7	Uneven distribution of funds among schools	78	3.564	High effect
8	The need for facilities management not recognized	78	3.557	High effect
9	Maintenance works are undertaken in a disjointed manner with no clear	78	3.5	High effect

	strategy			
10	Legislation on schools infrastructure inadequate	78	3.487	High effect
11	No sense of ownership for the school	78	3.32	High effect
12	Lack of community involvement	78	3.294	High effect
13	No control of funds by the school	78	3.269	High effect
14	Poor maintenance planning	78	3.23	High effect
15	Ineffective management of schools	78	3.072	High effect
16	Overcrowding	78	3.036	High effect
17	Mismanagement of funds	78	2.923	Moderate effect
18	Uncommitted school management	78	2.923	Moderate effect
19	Lack of security	78	2.794	Moderate effect
20	Unclear lines of accountability for maintenance	78	2.756	Moderate effect
21	Incompetent contractors	78	2.448	Low effect

Source: Field Survey, 2017

“The Rivers State government through the Ministry of Education should be responsible for the public schools infrastructure maintenance as the major stake holders in education”. Though, it can be assisted by corporate bodies and host communities.

4.3 Mean Score of Maintenance Condition of the Six Schools Infrastructures

Table 4.3 shows that the mean score of the condition of all the building elements of the six school buildings and the school premises is less than average (<3.00). This shows that the roofs, walls, windows, doors, sanitary system, electrical fittings, plumbing services, fence and the premises are poor (See Plates 1 to 5). This implies that of all the components of the schools infrastructure are dilapidated and little or no attention has been paid to

maintenance, except in situations where deliberate effort was applied to rectify defects by Parents and Teachers Association.

Table 4.3: Mean Score of Maintenance Condition of Components of School Infrastructures.

Components	N	Sum	Mean	Decision
Roof	78	218	2.794	Poor
Frames	78	195	2.500	Poor
Windows	78	175	2.243	Poor
Doors	78	173	2.218	Poor
Floor	78	206	2.641	Poor
Wall	78	219	2.807	Poor
Sanitary system	78	136	1.744	Poor
Electrical fittings	78	166	2.123	Poor
Plumbing	78	145	1.858	Poor
School Premises	78	199	2.551	Poor
Fence	78	195	2.500	Poor

Legend :<3.00 = poor; >3.00 = good
Field Survey, 2017.



Plate 1: Vandalized Building Roof and Broken Ceiling Boards, Kpiti Tai
Source: Field Survey 2017.



Plate2: Dilapidated Dormitory in Government Secondary School, Luawi
Source: Field Survey, 2017.



Plate 3: Dilapidated Classroom Block in Government Secondary School, Luawi
Source: Field Survey, 2017.



Plate 4: Vandalised Dormitory in Government Secondary School Okehi, Etche
Source: Field Survey, 2017



Plate5: Damaged Roof Members Due to Vandalism at Onne, Eleme
Source: Field Survey, 2017.

4.4 Measures to Improve the State of Public School Infrastructure

Key informants from the Ministry of Education said that there is no measure for now, the key informants therefore suggested that the State Government should:

- Provide adequate security personnel and fence the school premises in the state.
- The school authorities should involve the host communities for the protection and maintenance of the school.
- The introduction of a maintenance management framework will assist in the maintenance and management of public schools infrastructure.

Summary of Key Informant Information from School Principals Stated that:

- Government should make provision for adequate budgetary allocation and procurement processes for the maintenance work of public schools in the state.

- The State government should involve the local government in the maintenance of schools infrastructure.
- Also NGOs, School board, Private Organization, and community should collectively or individually provide plants and equipment for the maintenance of state public schools
- Interview with school principals on Measures that should be undertaken to improve the state of public schools infrastructure.

Key informant information’s from the School Principal at G.S.S Kpitedatedthat:

- “The government has no plan to improve public schools infrastructure, the government has not been responsible for renovating any infrastructure in the public schools. Only some concern corporate bodies that had always come to the aid of the schools by renovating existing structures and build new ones”.

The study proposed a multi stakeholder maintenance management framework for the proper maintenance of public schools infrastructure. The maintenance management framework should involve all the stakeholders which includes the three tiers of government, staff, students, parents, communities, companies operating in the state and host communities, the investors in the private sector and NGOs.

5. Conclusion

The study focused on the condition of public secondary schools built in the 1970’s in Rivers State. The study discovered that there are multiple factors that led to the dilapidation of public schools infrastructure. The major factors include vandalism, overcrowding, neglect, lack of maintenance, incompetent contractors, lack of security, inadequate government intervention, inadequate funds allocated to schools for maintenance works, deferred maintenance, mismanagement of funds, and no sense of ownership by users, teachers, parents and community members. The study proposed a multi stakeholder maintenance management framework for the proper maintenance of public schools infrastructure. The maintenance management framework should involve all the stakeholdersthat include three tiers of government, staff, students, parents, communities, companies operating in the state and host communities, the

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