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Evaluating the Influence of School Based Management System on Maintenance Management of Public School Buildings

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Abstract: Public schools are built to meet the needs and desires of end-users as they face immediate pressure to preserve existing building facilities. The purpose of a building is defeated if its end-users are not satisfied by the overall building performance. This study evaluates the influence of School Based Management System on Maintenance management of public model primary schools in Rivers State, Nigeria. The study adopted a cross-sectional survey design research methods using questionnaires, interviews and observations to collected data through both primary and secondary sources. Structured questionnaires numbering 504 were distributed to the end-users (staff, pupils and parents end-users) of the schools and 331 were retrieved representing 65.7% response rate. The end-users were purposively selected from 12 schools in 6 Local Government Areas in the state, and 2 schools from each Local Government Area end-user perceptions were measured using a 5-point likert scale rating. The collected data were analyzed utilizing descriptive statistical tools and content analysis in both quantitative and qualitative forms. Results showed thatthere is no doubt dilapidated and unhealthy public school buildings are in decaying environment depressing the quality of life and contributes in some measure to anti-social behavior after the introduction of School Based Management System (SBMS) representing 70% responses. The study further revealed prior to the introduction SMBS the maintenance strategies adopted was outsourcing useful in producing functional and healthy school building representing 80% responses. The defects mostly observed on the buildings in the various schools were electrical, plumbing, defective walls and floors, and roof problems. Furthermore, study identified the challenges face to be misuse of facilities, and inadequate funding of maintenance operations and withdrawal of outsourcing staff with the introduction of school based management committees and chargeable fees. However, the conditions has affected the end-users of the buildings; their level of comfort which relates to the measure of performance of the functional and technical building systems. Inevitability as established in this study, POE is a useful tool for building asset and maintenance management that evaluate, verify, and effectively integrate buildings toward sustainability. The study recommends outsourcing maintenance strategy in order to rectify defects and improve end-users satisfaction and comfort.

Keywords: POE, Educational Buildings, Building Conditions, Maintenance, Management System.

1.0 Introduction

Educational buildings, facilities and their environment must be given the highest attention for effective functioning and productivity. A completed and maintained public building should be able to perform it functions in the manner that will ensure satisfaction for its occupants, and ensure effective function at all times (Nawawi and Khalil, 2008). Maintenance manager seldom received useful feedback about the performance of completed public school buildings, except from satisfied or satisfied end-users. (Nkpite and Wokekoro, 2018). Evaluation by the actual end-users of a building is therefore for improving quality of maintenance operations (Ilesanmi, 2010). Public school buildings need an evidence-based plan to fix the issues permanently in the form of revised maintenance standards and oversight processes (Mustafa, 2017).

The public school buildings in Nigeria occupy a special position compared to the other sectors of the economy. Despite the introduction of School Based Management System (SBMS) comprising School Based Management Committee (SBMC), it is of paramount importance that the ongoing system of management and maintenance of public school buildings and facilities has posed several challenges to the functionality of the buildings, facilities and its occupants. School Based Management System (SBMS) is a community based processes of managing and maintaining public schools through funds contributed by the communities by the local communities through Parent Teachers Association (PTA), Schools, Counsel and Community Based Organization which are used for infrastructure construction, maintenance and supply of basic equipment (Nkpite, 2017). Many complaints from end-users of these public schools are related to defects and shortcomings after occupation, such as performance and functional efficiency, accessibility, distribution and configuration of spaces, ventilation and day- lighting, thermal comfort, productivity, security, and safety, among others, require accurate and considerable treatment.

There is no systematic and organized mechanism present in the public schools to solve the identified challenges with the public schools. Post occupancy evaluation can be adopted as a manifold tool in solving problems of public school buildings and facilities management, because it provides the ability to evaluate the performance of buildings and facilities systematically (Nkpite and Wokekoro, 2017). Additionally, POE can also be applied as an efficient and systematic method to gather data and information on a specific building, but unfortunately, it has not yet been undertaken for governmental and public school buildings in Rivers State, Nigeria. This is typical to the Rivers State Government Model Primary School Buildings which are in a state of premature, but steady and rapid deterioration, decay and dilapidation due to the introduction of School Based Management Committee (SBMC).

The existing studies rarely associated end-users satisfaction with the performance of public school buildings in terms of management and maintenance protocols. Hence, this study is an attempt to bridge this gap in research. In principle, this study contributes to knowledge in the field of evaluating the influence of School Based Management System (SBMS) in Rivers State Government Model Primary School Buildings and its facilities in terms of POE and end-users satisfaction.

1.2 Aim and Objectives of the Study

Based on the research problem, this study seeks to evaluate the influence of School Based Management System (SBMS) on management and maintenance of Model Primary Schools in Rivers State. The objectives of the study are to:

i. Ascertain what constitutes School Based Management System (SBMS)
ii. Ascertain the maintenance operations in the building prior to the introduction of SBMS
iii. Ascertain the maintenance operations in the buildings after the introduction of SBMS.

1.3 Scope of the Study

The scope is limited to public educational buildings, particularly, the newly built prototype Rivers State Government Model Primary School Buildings across all the 23 Local Government Areas of the state that have been completed, equipped, occupied by end-users and functioning as well. The schools were constructed at different start dates across the state; from 2007 to 2010, and occupied from 2011 to 2015. The result of this study provide a database for the construction industry about building in use and abilities to determine how well a new concept of POE works for the government and public building, as well as contribute in improving buildings and buildings delivery processes.

2.0 Literature Review

Preiser and Vischer (2004) consider POE the most commonly used term for the activity of evaluating buildings in use. POE is about procedures determining whether maintenance and management decision made building managers are delivering the performance needed by those who use the building (Nkpite and Frank, 2019). The terms building appraisal, building evaluation, building diagnosis, POE, and buildings in-use describe studies that focus on completed building projects (Ilesanmi, 2010). Mustafa (2017) attempted to widen the scope in the direction of building performance evaluation, to integrate end-users and aesthetic factors with technical and economic factors. Watt (2007) uses the term "Building pathology" to describe that aspect of building appraisal that is concerned principally with defects and associated remedial action. Although Duffy (2008) explained that the existence of a terminological dilemma, these concepts aim to find out how the completed building performs; determining possible misfits mistakes, or omissions; and accumulating information for future programming and maintenance efforts.

2.1.1 Potential Benefits of the Applications of POE in Public Schools

According to Vander Voordt and Van Wegen (2005), POE provides enormous potential for improving the performance of a building; as POE evolves to fill the gap in the conventional building process, which consists of planning, programming, design, construction and occupancy of a building. It represents the vital diagnostic step that is needed to feed to prescriptive tools of planning and programming (Ibid). The gap between the actual performance of buildings and explicitly stated performance criteria constitute the evaluation (Preiser et al, 1988). The merits of POE are diverse in its applications (Mustafa, 2017): firstly, it ensures the substance of building performance, particularly, of public buildings and facilities. It was the reason Vischer (2002); Nkpite and Frank (2019)stated that POE is used in determining building defects, formulating design and construction criteria, supporting performance measures for asset and facility management, lowering facility life cycle costs by identifying design errors that could lead to increase maintenance and operating costs, and clarifying designs objectives. Secondly, POE provides a mechanism for understanding the mutual interaction

between buildings and end-users' aspirations and for proposing ways of improving the environment necessary to accommodate these aspiration (Vischar, 2002; Ilesanmi, 2010). In this context, Nkpite and Frank (2019), suggested that POE is used in planning and budgeting from additional furnishing/equipment, planning and budgeting for improved building operation and maintenance rectification, modification to correct short-coming, incorporating findings into future facilities maintenance and management standards, and informing government about the infrastructure and its significant findings with proffered solutions as the potential benefits in the applications of POE in public educational buildings. However, despite the large number of research in the context of building performance, POE as a systematic method of data collection on buildings in-use has not found wide usage for public educational buildings and facilities in model primary schools in Rivers State, Nigeria; hence the need for this study is necessary.

2.1.2 Evaluating Educational Building Performance

Educational buildings present trends of high operating costs, creasing competition and rising end-users expectations, particularly in public schools which must seek to maximize their return on building investment (Nkpite, 2017). Buildings are paramount to the day-to-day running of human activities in public schools. It is of importance to all organizations. Building performance evaluation facilitates the realization of this objective (Amaratunga and Baldry, 2000; Olatunji, 2013). Amaratunga and Baldry (2000) and Sanoff (2003) stated that buildings represent a substantial percentage of most educational institutions assets, operating costs, including end-users' requirements. Their evaluating level is therefore very critical to performance of educational effectiveness. Educational buildings are designed and built to meet specific or groups of human needs that are already determined before construction (Mustafa, 2017). Educational buildings constitute the structural enclosure that enables academic activities to run effectively. Mayakai (2005) stated that the ability of the building to successfully accomplish the purpose for which it was built measures its success. In this context, educational buildings are maintained to facilitate learning process, i.e., knowledge transfer, promotion, and management (Okolie, 2011). Sanott (2003) maintains that the maintenance of model educational building strongly emphasizes on stimulating and adaptable learning environments with spaces that support various methods of teaching and learning. Then, educational building maintenance should be adaptive and flexible to accommodate required functional changes within the building envelope and its environs. Okolie (2011) clarifies that evaluating building performance helps to ascertain if organizations are managing existing building stock responsibly; by understanding how existing buildings affect end-users' maintenance managers can minimize problems and capitalize on successful maintenance features that improve the system performance.

The most important benefit of evaluating educational buildings, however, is continuous improvement of quality and performances of facilities particularly with the reoccurring maintenance programs or in which significant number of facilities are typical (Preiser, 1995). The value of POE is being increasingly recognized as valuable tools in all construction sectors; education, healthcare, offices, commercial, and housing, in which poor building performance will affect running costs, occupant's well-being and business efficiency (Lawrence, 2013). To this end, Van der Voordt and Maarlereld (2006) noted that evaluating building performance; assesses the architectural, functional, technical, and economic value of buildings (product evaluation) or building procurement process (process evaluation). The existing studies rarely associated evaluating educational building performance with the management and maintenance systems applicable to model primary school buildings and its facilities in Rivers State and Nigeria at large. Hence, this study is an attempt to bridge this gap in research.

2.2 Concept of School Based Management System (SBMS)

School Based Management System (SBMS) is the process of providing systematic of approaches to managing the performance of building assets to meet service delivery requirements in public schools (Queensland, 2012). It is also a rational for making decision about public school buildings as to ensure their performance (Osaro, 2017). In this context, School Based Management System (SBMS) is a process primarily concerned with the management in-use of public school buildings in which maintenance of building asset take place relating to critical phases of planning and procurement (Queensland, 2012). From the later part of the definition (planning and procurement), in order to ensure proper maintenance and management of public schools infrastructure, it is important there exist relationships between stakeholders for improvement of the state of public schools infrastructure, since maintenance requires planning and procurement.

2.2.1 Composition of School Based Management System

With the intend to improve and strengthen maintenance management responsibility and accountability; the Rivers State Government through the ministry of Education in 2016 introduces School Based Management System (SBMS) (Rivers State Ministry of Education, 2016). It was the involvements of keystakeholders formed

through a Community Based School Management Committee (CBSMC) segmented at all public schools in Rivers State. Their involvements in public school management was building, networking and structuring engagements among themselves. The Community School Based Management Committee (CSBMC) comprises of students (pupils), Teachers and Parents of the students, maintenance contractors, Community Based Organizations (CBOs), NGOs and the multi-nationals as donors. The roles of CSBMC includes condition assessment of facilities, providing funds for maintenance sourcing for maintenance contractors, planning, budgeting and procurement process (Rivers State Ministry of Education, 2016). Osaro (2017) stated that the trend of constructing public schools infrastructure without proper planning and implementation in managing the whole life cycle of buildings will impede performance. The aims at establishing, identifying and maintaining the relationship that exist with the School Based Management System (SBMS) to trigger proper planning and implementation of whole building lifecycle, managing infrastructure with maintenance as top priority was a failure on the part of Government (Nkpite, 2017).

2.2.2 Conditions of Public School Buildings and Facilities

In recent years, several studies have shown that schools buildings and facilities are in deplorable conditions making teaching and learning taken place in a stressful and uncondusive environment with a serious implications. According to Primary Teaching Service Commission (2004) as cited Mojela (2013), at Lagos State Education summits estimated that 90% of public schools infrastructure was considered to be in a dilapidated state. In line with the above assertion, the United Nations Education Committee (2008) as cited Osaro (2017) has also emphasized that public school buildings in Nigeria at all levels are dilapidated, describing public schools environment in Nigeria as a truly pathetic situation that need urgent attention. Also, the United Nations Education Committee (2008) agrees that there is a critical need for greater government and donor investment in Nigeria for improvement of public school buildings.

Asiabaka and Owerie (2003) examined the deficiency of public school buildings in Imo State, Nigeria and identified dilapidated floors that need plastering, with most buildings with mud walls, without doors and windows, and non-availability of sanitary convenience as their major constraint in public schools. And further noted that it is impossible for anyone to notice the most widely disappointment in Nigerian public school buildings today, is the dilapidated structures.

Ikoya and Onoyase (2008) examined the various problems been experienced in the education sector that require urgent national priority to include: the task for the provision of infrastructure, maintenance and refurbishment of dilapidated classrooms and the enormous task for all stakeholders to build new ones too. Narudeen and Usman (2011) observed that government expenditure between years 2000-2010 has been tag as a poor nation with huge backlog of decayed public school buildings. The earlier studies of Adeyemi and Adu (2010) pointed out that as far as public school buildings is concerned, Nigeria has clearly not recorded any significant success in public school buildings delivery due to lack of equipments and furniture, despite rising government expenditure which has not been translated in to meaningful development.

2.2.3 Maintenance of Public School Buildings

Public school buildings and its facilities represent the engine of social and economic activities of the educational sector as the major challenges of economic development (Asayi, 2012). Services associated with the use of public properties accounts roughly 10% - 15% of the gross domestic product (GDP) (Anele, 2010). It is important for the facilities to have a strong links towards growth, poverty reduction and environmental sustainability (Bello and Loftness, 2010). Ali, Kamanazzaman, Sulaiman and Peng (2010) define building maintenance as the combination of technical and administrative action to ensure that the items and elements of a specific infrastructure are kept and restored in an acceptable standard to perform its required functions. The four components of maintenance are servicing, rectification, replacement and renovation (Madikizela, 2010). Horne and El-Haran (2002) states that in order to implement efficient and effective maintenance strategies, a set of data and information is required in this regards which include technical data and information on drawings, operational and maintenance instructions, inspections, technical manuals. The information and techniques necessary to achieve maintenance objectives are building records, expenditure records, establishment requirements, estimate and budget information, budgetary control, methods of execution, communication with staff and decision making about the execution of maintenance (Madikizela, 2010). Poor maintenance performance is as a result of inaccurate decisions made in cost allocation and poor management with the existing building conditions and complaint regarding performance as critical decisions taken on maintenance. The purpose of building maintenance is prompted by factors to retain investment value, maintain building to acceptable standard and required condition, present a good appearance, generating income and conserving historical and architectural values of the building (Ali et al; 2010). Hasselaar (2003) noted that an indicator of a good maintenance is a sign that points to a condition to be measured, to evaluate specific qualities and

performance derived from values held by end-users who are stakeholders in the building industry, thereby indicating that the criteria for measuring performance of buildings should based on how end-users see their buildings and the importance attached to it.

The existing studies rarely associated maintenance and management of facilities with end-users satisfaction and performance of public model primary schools in Rivers State and Nigeria. Hence, this study is an attempt to solve the problems with public school buildings maintenance and management.

3.0 Research Methodology

The research design utilized in this study was a cross sectional survey design that involves a number of prototypes built across the 23 Local Government Areas by the Rivers State Government. The population was 138 completed and functional school buildings in the State including staff, pupils and parents. Purposive sampling technique was used to select 6 Local Government Areas and 2 schools in each Local Government Area giving a total 712 schools. The utilized structured questionnaire and key informant interview to collect primary data. A total of 504 structured questionnaires were administered to the pupils, staff and parents (visitors) and 331 questionnaires were retrieved representing 65.7% response rate. The questionnaires used a 5 point likert scale to measure the performance and satisfaction level with provided facilities; 1=very unsatisfied, 2 = unsatisfied, 3= moderate satisfied, 4 = satisfied, and 5 = very satisfied. The study also used observation and photographs to identify the conditions of the provided facilities in public school buildings. Descriptive statistical tools such as percentage and mean score were used to analyze collected data.

Table1: Name and Address of Schools Studied

S/NO	Names/Address of Schools	Local Govt. Area
1.	State Primary School 1, Kpite	Tai
2.	State Primary School, Ueken	Tai
3.	State Primary School, Rumueme	Obio/Akpor
4.	State Primary School, Rumurolu, Oro-Evo	Obio/Akpor
5.	State Primary School, Ogale	Eleme
6.	State Primary School, Aleto	Eleme
7.	State Primary School, Igwurutta	Ikwerre
8.	State Primary School, Aluu	Ikwerre
9.	Port Harcourt Model Primary School, Rumuwoji	Port Harcourt
10.	St. Andrews State School Diobu	Port Harcourt
11.	State Primary School, Ndashi	Etche
12.	State Primary School, Okomoko/Egwi	Etche

Source: Author's Field Survey, 2017.

4.0 Results and Discussion

The results of the study are presented below

4.1 What Constitute School Based Management System (SBMS)

It was necessary for this study to identify what constitute SBMS with its introduction in 2016 by the Rivers State Ministry of Education. Table 2 indicated that 32% of the respondents agree the payment of registration fees constitute school based management system levies for the management and maintenance of public school buildings in the state, while 20% also agree that examination fees constitute SBMS managed by school based management committee. Others items identify are sport fees (16%), environmental fees (14%), sales of craft (10%), and donations (8%).

Table 2: Constitution of School Based Management System (SBMS)

What Constitutes SBMS	Frequency	Percentage %
Registration fees	106	32.0
Examination fees	66	20.0
Sport fees	53	16.0
Environmental fees	45	14.0
Sales from craft	33	10.0
Donations	27	8.0
Total	**331**	**100.00**

Source: Author's Field Survey, 2017

Majority of the respondents stated that Rivers State Government is insincerity to introduce School Based Management System, appointing School Based Management Committee to manage the proceeds for maintenance of public schools. The funds generated from the system will be inadequate to manage and maintain model primary school buildings in the state. Hence, inadequate funding of maintenance through SBMC will keep public school buildings in deplorable states favourable for teaching and learning.

4.2 Maintenance Management Operations Prior to Introduction of SBMC

The respondents were asked to indicate the available maintenance strategies prior to the introduction of school based management committees in public schools. Figure 1 showed that 68.3% (majority) of the respondents agreed that the maintenance strategies adopted prior to the introduction of school based management committees in public schools were outsourcing (contractors), while 21.1% claimed the maintenance strategies operational were in-house (staff), and only 10.6% indicated the strategy as both outsourcing and in-house.

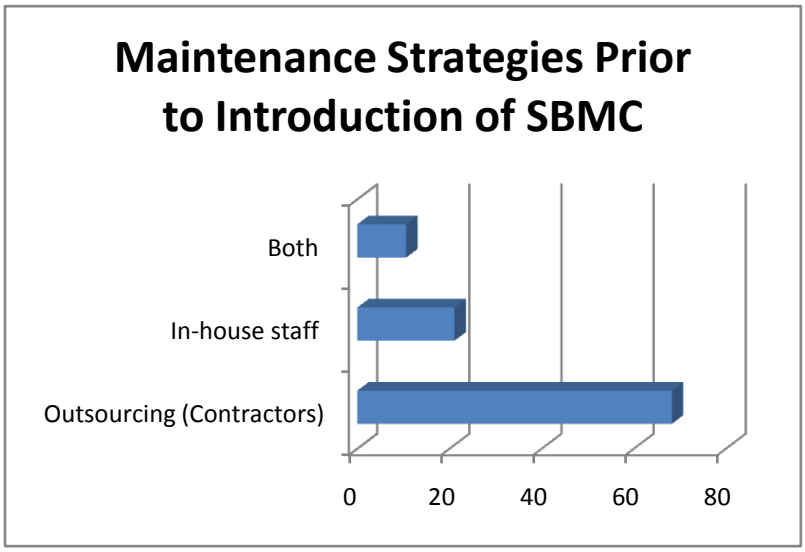


Figure 1: Maintenance Strategies Prior to Introduction of SBMC
Source: Author's Field Survey, 2017

An in-detpth interviews with head teachers of public schools revealed that the major challenges with maintenance and management of the school buildings was the introduction of SBMC with chargeable fees levied the pupils parent and the withdrawal of the outsourcing staff who were undertaking corrective and routine maintenance in the school buildings. The chargeable fees are inadequate for the maintenance of these schools. Parents/guidance has decided to withdraw their children/wards from public school due to the chargeable fees. And the amount involve when compare to fees of low classes private schools are encouraging to pay with the scenario playing out in public schools.

4.2.1 Reliability of the School Buildings Prior to Introduction of SBMC

The respondents were required to rate their satisfaction level based how they feel the buildings perform; accessibility, reliability and functionality of the school buildings prior to the introduction of school based management committees. Table 3 shows all items and attributes under this indicator that the buildings (enhances productivity, a pleasure to use, unique landscape setting, effective facilities/equipments, environmentally friendly built, safe and secure, serviceability, quick maintenance responses, cleanliness of toilets/classrooms, quality of structure and finishes, adequate water and electricity supply and improve sanitation) recorded mean values of (4.11), (3.37), (3.87), (3.86), (3.34), (3.03), (3.43), (4.35), (3.59), (3.47), 3.61) and (3.15), correspondently, indicating a degree more than (>3.00) average level of performance and satisfaction. It implies that prior to introduction of school based management committees, the public school buildings performance were satisfying the end-users; meeting their needs and expectations; showing that the buildings were functional, accessible and reliable.

Table 3: Reliability of Buildings Prior to Introduction of SBMC

Reliability of Buildings	**Weighed: (N=331)**					**Sum**	**Mean**	**%**	**Decision**
	5	**4**	**3**	**2**	**1**				
Buildings enhances productivity	90	80	56	55	50	1360	4.11	82.0	S 1
A pleasure to use buildings	89	76	67	51	48	1115	3.37	67.4	S 9
Effective facilities/equipment	99	79	71	56	26	1281	3.87	77.4	S 2
Unique landscape settings	79	71	99	26	56	1278	3.86	77.2	S 3
Environmentally friendly built	80	70	95	54	32	1106	3.34	66.8	S 10
Building safe and secure	70	61	80	69	51	1003	3.03	60.6	S 12
Functional serviceability	75	60	79	52	65	1135	3.43	68.6	S 8
Quick maintenance responses	71	71	71	71	47	1142	3.45	69.0	S 7
Good level of cleanliness	62	74	73	70	52	1188	3.59	71.8	S 5
Good quality of structure/finishes	69	65	83	58	56	1148	3.47	69.4	S 6
Adequate water and electricity	60	61	90	60	60	1195	3.61	72.2	S 4
Sanitation in the vicinity	65	65	71	65	65	1043	3.15	63.0	S 11

Legend: 5 = very satisfied (Vs), 4 = Satisfied (S), 3 = Undecided (U), 2 = Dissatisfied (D), and 1, = Very Dissatisfied (VD); and <3.00 Dissatisfied, >3.00 satisfied

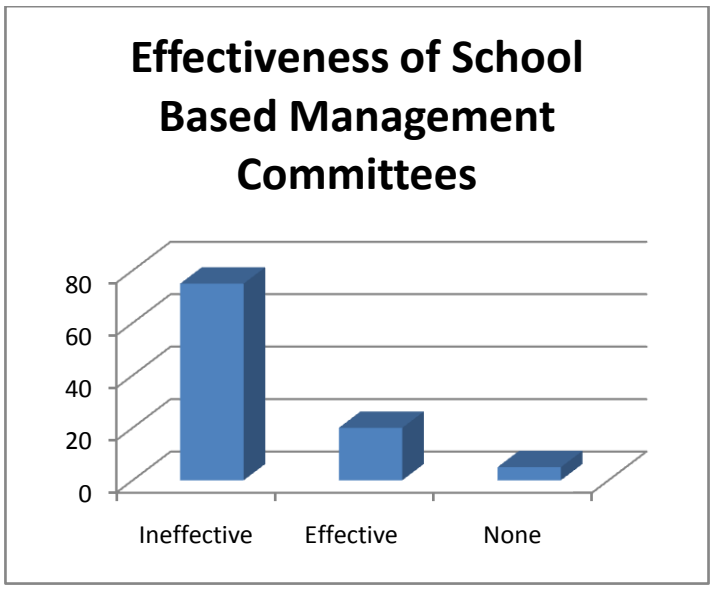
Source: Author's Field Survey, 2019.

4.3 Maintenance Management Operations after the Introduction of SBMC

As earlier stated, the respondents indicated that all the outsourcing staffs were withdrawn due to the introduction of school based management committees. This section will present what occurs after the introduction of SBMC from respondents' perspective. Table 4 shows all items and attributes this indicator as the challenges faced after the introduction of SBMC in public schools.

4.3.1 Effectiveness of School Based Management Committees

Figure 2 shows the ineffectiveness of school based management committees after its introduction in 2016. The figure showed that he attitude of the school committees to manage the buildings were mostly ineffective was 75%, while effectiveness response rate was 20%, and none was 5%. The committees are therefore faced with the problem managing pupil's misuse of these facilities and overcrowd space against intended number of usage.



4.3.2 Challenges Faced by Committees in Maintenance Management Delivery

Table 4 shows the challenges being faced by the school based management committees in effective maintenance management delivery in public school buildings. The table showed that more than average (>3.00) of the respondents were dissatisfied with inadequate funding, dilapidated and unhealthy, buildings, delay response to replace elements/components, defective aesthetic nature of buildings, depleted quality and physical

appearance of buildings, incidence of crime of burglary, unsafe and insecure environment. The defects mostly observed on the buildings in the various public schools survey are electrical, plumbing, defective walls and floors, as well as roof problems.

Table 4: Challenges Faced by SBMCS in Maintenance Management Delivery

SMBC Challenges	Weighed: N=331					sum	$\bar{x}$	%	Decision
	1	2	3	4	5				
Inadequate funding	90	80	50	56	55	732	2.18	43.6	Dissatisfied
Dilapidated and unhealthy buildings	76	89	67	48	51	748	2.25	45.0	Dissatisfied
Delay responses to components replacement	76	69	66	63	57	759	2.29	45.8	Dissatisfied
Building aesthetic nature defective	69	66	76	60	60	800	2.41	48.2	Dissatisfied
Quality and physical appearance of building depleted	88	78	67	53	45	819	2.47	49.4	Dissatisfied
Increase incident of crime of burglary	59	80	78	64	50	828	2.57	51.4	Dissatisfied
Unsafe and insecure environment	78	82	66	59	46	939	2.83	56.6	Dissatisfied

Legend: <3.00 Dissatisfied (D), >3.00 Satisfied (S)
Source: Author's Field Survey, 2019

Plate 1: Poor landscaping at Ueken

Plate 2: Fitty Environment at Ndashi

Plate 3: Damaged Recreational Facilities at Kpite

Plate 4: Rotten Ceiling due to roof leakages at Rumueme

Plate 5: Improper Waste Disposal at Igwurutta

Plate 6: Riffed off Wall Tiles at Rumuwoji

Source: Author's Field Survey, 2017

5.0 CONCLUSION AND RECOMMENDATIONS

This study presents the evaluation of the influence of School Based Management System (SBMS) on maintenance management on selected public model primary school buildings in Rivers State, Nigeria. The study found out that what constitutes SBMS with its management committees are registration fees, examination fees, sport fees, environmental fees, sales from craft and donations and these levies will be inadequate in managing and maintaining public school buildings. The study establishes that outsourcing maintenance management strategy were adopted prior to the introduction of School Based Management Committees; making the buildings to be reliable as its enhances productivity, pleasures to use buildings, unique landscaping, functional/effective facilities/equipments, environmentally friendly built, safe and secure, improve serviceability, quick maintenance responses, cleanliness of buildings, good quality of structure and finishes, adequate water and electricity supply and serene environment. The findings showed that the ineffectiveness of School Based Management Committees introduced has resulted to production of dilapidated and unhealthy buildings, delay response to replace fail building components defective aesthetic nature of buildings, quality and physical appearance of buildings depleted, increased incidence of burglary and unsafe and insecure environments as the challenges faced after the introduction of school based management committees due to inadequate funding of maintenance works.

The defects mostly observed on the buildings in various public schools surveyed were electrical, plumbing, defective walls and floors as well as roof problems based on the foregoing conclusion. The compelling results confirm the relevance of POE playing a vital role in the strategic planning of building management and can be placed in the context of public sector. POE can reduce the appearance of defective problems; because the process allows a strategic assessment of the current performance of the building and it uses a planned approach to achieve the best quality in building services, whereby end-users' opinions are integrated.

In order to improve the maintenance management of these public schools, the study suggested the discontinue use of school based management system. And government should apply POE as a tool to improve and facilitate many forms of integration of various building systems, activities and knowledge.

REFERENCES

[1]. Adeyemi, T. O. and Adu, E. T. (2010). Enrollment Analysis and the Availability of Physical Facilities for Universal Basic Education Programme in Ekiti State, Nigeria.
[2]. Ali, A., Kamarruzzaman, R. S., Peng, Y. C., and Sulaiman, R. (2010). Factors Affecting Housing Maintenance Cost in Malaysia, Journal of Facility Management, 2(6), 102 – 114.
[3]. Amaratunga, D. and Baldry, D. (2000). Assessment of Facilities, Management Performance. Facilities, 18(7/8), 293 -301.
[4]. Anele, D. (2010). Public Property, Maintenance Culture and the Nigerian. Nigeria: The Punch.
[5]. Asayi, A. (2012). Assessing School Facilities in Public Secondary Schools in Delta State, Nigeria. An International Multidisciplinary Journal, Ethiopia, 6(2), 192 – 205.
[6]. Asiabaka, I. P. and Owerie, C. (2008). The Need for Effective Facility Management in Schools in Nigeria. New York Science Journal, 2(3), 15 – 22.
[7]. Bello, M. A. and Loftness, V. (2010). Addressing Inadequate Investment in School Facility Maintenance. School of Architecture Paper 50. Carnegie Mellon University.
[8]. Duffy, F. (2008). Building Appraisal: A Personal View. Journal of Building Appraisal, 4(3), 149 -156.
[9]. Hasselaar, E. (2003). Health Performance Indicators of Housing, In: Proceedings of Healthy Buildings, ISIAQ, (Cited in Kim et al, 2005).
[10]. Ikoya, P. O. and Onoyase, D. (2008). Universal Basic Education in Nigeria, Availability of Schools Infrastructure for Effective program Implementation. Education Studies, 34(1), 11 – 24.
[11]. Ilesanmi, A. O. (2010). Post Occupancy Evaluation and Residents' Satisfaction with Public Housing in Lagos, Nigeria. Journal of Building Appraisal, 6(2), 153 – 169.
[12]. Khalil, N. and Nawawi, A. H. (2008). Performance Analysis of Government and Public Buildings Via Post – Occupancy Evaluation. Asian Social Science, 4(9), 103-112.
[13]. Lawrence, A. M. (2013). Post Occupancy Evaluation of On-Campus Students' Hall of Residence: A Case Study of ObafemiAwolowo Hall of Residence, Ile-lfe, Greener Journal of Science and Engineering Technology Research, 3(1), 001 – 011.
[14]. Madikizela, K. (2010). Maintenance Management. Unpublished Raw Data.
[15]. Mojela, T. W. (2013). Assessment of the Effectiveness of Public Schools Infrastructure Maintenance System in the Gauteng Province. M. Tech. Thesis in Construction Management of the Department of Construction Management and Quantity Surveying of the University of Johannesburg.

[16]. Mustafa, F. A. (2017). Performance Assessment of Building Via Post-Occupancy Evaluation: A Case Study of the Building of the Architecture and Software Engineering Departments in Salahaddin University-Erbil, Iraq. Frontiers of Architectural Research, 6; 412 – 429.
[17]. Nkpite, B. S. (2017). A Study of Post Occupancy Evaluation as a Maintenance Tool for Rivers State Government Model Primary Schools. Dissertation Submitted to the Department of Estate Management, Faculty of Environmental Sciences, Rivers State University, Port Harcourt.
[18]. Nkpite, B. S. and Frank, O. L. (2019). Potential Benefits for Adopting Post Occupancy Evaluation (POE) as Maintainability Tool for Nigerian Public School Buildings International Journal of Science Arts and Commerce, 4(1), 79-89.
[19]. Nkpite, B. S. and Wokekoro, E. (2017). Post Occupancy Evaluation Tools for Effective Maintenance Management of Public Schools. British Journal of Environmental Sciences, 5(3), 1-8.
[20]. Nkpite, B. S. and Wokekoro, E. (2018). Users Evaluation of Building Elements of Rivers State Government Model Primary Schools. Journal of the Nigerian Institution of Estate Surveyors and Valuers, 41(1), 85 -97.
[21]. Okolie, K. C. (2011). Performance Evaluation of Buildings in Educational Institutions: A Case of Universities in South-East Nigeria: A Ph.D Thesis in Construction Management, Nelson Mandela Metropolitan University, Port Elizabeth, South Africa.
[22]. Olatunji, A. A. (2013). Post Occupancy Evaluation of Lagos State Polytechnic Facilities: A User-Based System. Journal of Emergency Trends Engineering Applied Sciences, 4(2), 229 – 236.
[23]. Osaro, G. N. (2017). Developing a Maintenance Management Framework for Public Secondary Schools in Rivers State. Unpublished M. Sc Dissertation, Department of Estate Management, Rivers State University, Port Harcourt.
[24]. Preiser, W. F. E. (1995). Post Occupancy Evaluation: How to take Buildings Better. Journal of Facilities, 13(11), 19 – 28.
[25]. Preiser, W. F. E. and Vischer, J. C. (2005) (eds). Assessing Building Performance, Butterworth-Heineman, Oxford. A Web Based Indoor Environmental Quality Survey, Indoor Air, 14(1), 65-74.
[26]. Queensland Government (2012). Maintenance Management Framework Policy for the Maintenance of Queensland Government Buildings: www.hpw.gld.gw.all/site collection documents/mmf.pdf.
[27]. Rivers State Ministry of Education (2016). Rivers State Government; Ministry of Education Quarterly Journal, 2016.
[28]. Sanoff, H. (2003). Three Decades of Design and Community. North Carolina State University, Raleight, N.C.
[29]. Van der Voordt, T. J. M. and Maarleveld, M. (2006). Performance of Office Buildings from Users' Perspective. Ambient, Constriuido, 6(3), 7 -20.
[30]. Van der Voordt, T. J. M. and Van Wegen, H. B. R. (2005). Architecture in Use: An Introduction to the Programming, Design and Evaluation of Buildings. Elsevier, Oxford.
[31]. Vischer, J. (2002). Post Occupancy Evaluation: A Multifaceted Tool for Building Improvement. Federal Facilities Council, the National Academic press, US, 23 – 34.
[32]. Vischer, J. C. (2008). Towards a Users' Centered Theory of the Built Environment. Building Research Information, 36(3), 231 – 240.
[33]. Watt, D. (2007). Building Pathology. 2nd Edition. Blackwell, Oxford.