

# Comparative Analysis of Facilities Management Strategies for Sustainable Development in Nigerian Tertiary Institutions

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## Abstract

Nigerian tertiary institutions due to their ownership and management thresholds, have divergent policies for the management of building facilities. This reveals the rationale behind different management strategies during their life cycles. A comparative study is therefore needed for the sustainable strategies adopted in the management of the facilities and buildings developed by private owned institutions and government owned. It is against this background that this paper assessed a comparative analysis of facilities available, the level of efficiency of the facilities, the challenges associated with the facilities as well as the management strategies adopted by both private and public tertiary institutions. The opinions of staff and students of Ajayi Crowther University, Oyo and Federal Polytechnic, Ile-Oluji were sampled through structured questionnaires. The data were quantitatively analysed and the results presented. The challenges associated with the facilities are maintenance and management, quality of construction, response to complaint, lack of funding, natural disaster, procurement issues and storage system. The paper recommends effective management strategies towards the sustainability of tertiary institution's facilities, thereby achieving the overall goals; more funding in both institutions and a budget for the management of facilities; out-sourcing; establishment of institutional Estate Maintenance Unit separated from the works unit; internet access.

**Keywords:** Sustainability, facilities management, maintenance, private, public, tertiary institution

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## 1. Introduction

The lifespan of a building to a large extent, depends on the level of maintenance it is subjected to. Much of maintenance work will be inevitable, as it is in the nature of materials to deteriorate over time with usage and exposure to the elements of climate. The rates at which the deterioration of building materials and components take place may, to some degree however, be controlled by prudent decisions being made not only during the design or construction stage but well with routine maintenance policies and strategies. Facilities management has a vital role in sustainable development which is essential for the effective functioning of the educational system, especially the tertiary institutions. The Nigerian tertiary institutions face peculiar challenges however, in improving their individual facilities management as reflected in the administration policy and management structures put in place. This has led to developments of various properties within the institutions through various funding measures including IGR and contributed invariably to the rationale behind different management strategies embarked upon for their economic, physical and functional life cycle. According to Enoma (2005), the building industry had been experiencing a tremendous development and use of new building facilities with different technologies and this has led to an increase in the complexities of building facilities systems and which had been involving more professionals in the design, administration and managing of the properties and facilities.

While these developments have been on increase, there is no clear indication of adherence of the sustainability of those facilities. Sustainable development is the development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs example of sustainable development is constructing a new community in a previously undeveloped area without destroying the natural resources. According to Brandon and Lombardi (2005) Sustainability is about using and maintaining the environs by the present generations and still maintaining it for the future generations to come. Sustainability has generally been referred to as using and maintaining a facility by the present generations in such a way that the unborn generations can also use it.

Maintenance of facilities in a property is essentially to retain its integrity; values for investment, aesthetics, safety and durability. The inconsistency in maintenance culture and the backlog of deferred maintenance of facilities in tertiary institutions reveal an array of dilapidated facilities, leading to a 'crash programme' during special occasions, ceremonials and accreditation exercises. It is however not clear if there have been studies in the past to find out whether the idea of sustainability was considered while developing these facilities in the first instance. Even if there was, there no evidence which alludes to the fact that a comparative study has been done in

relation to public and private universities alike. It is with this background that this paper examined the strategies adopted in the management of the facilities in Ajayi Crowther University Oyo and Federal Polytechnic Ile Oluji Ondo State; the sustainability of the strategies adopted, as well as the challenges associated with these building facilities? A thorough analysis and recommendations towards the sustainability of tertiary institution's building facilities, have been posited in this study.

## **2.0 Literature Review**

### *2.1 Facilities and the Learning Process*

It is expected that quality education is enhanced by the availability, quantity and quality of facilities for any level of cognitive training or learning. The conducive and enabling environment should alleviate the education process and determine the overall performance through the adequate and quality provision of needed facilities (Ayuba, Abdul and Abdulrahman, 2018; Ezeigweneme and Egolum, 2020). Njoku and Oluwuo (2018) posits that facilities should enhance the impartation of knowledge. This corroborates part of the targets of UNICEF's Sustainable Development Goals (SDGs) under Quality Education, which is to build and upgrade the facilities that will ensure and enhance effective cognitive learning outcomes (UNICEF). The outcome of knowledge intake is therefore hinged on the conduciveness of the teaching experience. Inadequate quality facilities and lack of maintenance, can create untold threat to learning, and as Barrett, Treves, Shmis, Ambasz and Ustinova, (2019), puts it, it hinders not just the learning but the teaching process. The education process is therefore a means of achieving an enlightened knowledge-based man (Omordu, 2013).

### *2.2 Common Facilities in Tertiary Institutions*

Facilities considered as germane in the achievement of teaching and learning outcomes are presented in literature to include, portable water, fire safety devices and equipment, adequate toilet facilities, security systems, transport system and network, information and communication technology (ICT) systems, electricity, sanitary drains, waste disposal system, and so on (Earthman 2004; and Duarte, Gargiulo, and Moreno, 2011). Other studies posit the provision of accommodation for students and probably staff; its quality of security and the availability, adequacy, and functionality of such facility, an added priority (Ajayi, Nwosu and Ajani, 2015; and Mugambwa, Mugerwa, Mutumba, Muganzi, Namubiru, Waswa, and Kayongo, 2016).

This therefore indicates that knowledge delivery is not pinned on the immediate teaching space only, but on the fulcrum of various facilities relating to the cognitive pedagogy, as it also determines the wellness of the individuals in the learning and teaching process. The presence or unavailability of these facilities affect the tranquillity of the learning environment, as students can protest to the unavailability or poor quality of the facilities. The staff are also affected in the effects of facilities in such that lack of which, may downplay the morale or quality of their commitment to the teaching or learning process. During a research conducted in six countries, 19 % of the teachers were not available, attributing absence to the uncomfortable and unhealthy feeling gotten due to the poor or inadequate facilities within the institutions (Chaudhury, Hammer, Kremer, Muralidharan, and Rogers, 2006). This will also affect their willingness to stay in the teaching environment (Buckley, Schneider, and Shang 2004; Thomas and Pasquale 2016).

### *2.3 Management and Maintenance of Facilities*

Facilities Management (FM) is an integral part of the overall management of any organisation, inclusive of Nigerian tertiary institutions. Facility Management as a Profession involves the practice of coordinating the physical works environment incorporating 'people, place, process and technology' (IFMA, 2004). The lifespan of a building to a large extent depends on the level of maintenance it is subjected to. Much of maintenance work will be inevitable, as it is in the nature of materials to deteriorate over time with usage and exposure to the elements of climate. Egboluche (2009) opined that the culture of management and maintenance has gone down to the drain and this has affected virtually our social and economic lives. The rate at which the deterioration of building materials and components take place may, to some degree however, be controlled by prudent decisions being made not only during the design or construction stage but well with routine maintenance policies and strategies. The facilities in Ajayi Crowther University Oyo and Federal Polytechnic Ile Oluji Ondo State cannot be completely exonerated from cases of deterioration of the building facilities. More so, there are challenges especially in meeting up with the cost of maintaining the buildings facilities as well as satisfying the end users of the facilities. Management and maintenance of facilities are therefore required through regular inspection, repair and servicing of components in order to restore their physical condition and sustain their work functionality..

### *2.4 Strategies in Managing Facilities*

Owing to the vast number of physical developments recorded within the educational institutions, there is need to focus on the sustainable strategies in the management of the facilities and buildings. Literature categorises strategies in the management of facilities to be generally preventive and corrective (Davis, 2022 and Omotayo

and Adewolu, 2023). Emoh and Ndulue, (2021) earlier asserted that management strategy of facilities could be planned, preventive, predictive and scheduled as well as corrective and emergence. The pre-emptive approach maintains that the risk of a failure is envisaged and catered for before the failure. It plans necessary measures to forestall the problem before its occurrence. The corrective strategy is a prompt measure to correct or amend, repair or replace the unit or facility that experienced the damage. It emphasises on the need to improve on the effect of the malfunctioning when it happens.

Comparing the two main strategies, Davis (2022) opined that cost is saved, time is monitored and effort is minimised when the proactive measure of preventive maintenance is adopted. Eti, Ogaji and Probert (2006) also assert that there is considerable reduction in cost and energy when adopting the preventive management strategy, lack of which is attributed to failure of healthy buildings and inadequate maintenance performances (Au-Yong, Ali, and Ahmad, 2014). A continuous pre-emptive routine maintenance approach according to Akinsola (2012) was earlier asserted to aid the healthy performance of educational institutions. Whereas, there is little or no proactive measure put in place by the institutions until the failure of the properties and facilities occurs and there is an emergency before corrective measures are carried out (Emoh and Ndulue, 2021).

### *2.5 Sustainable Management of Tertiary Facilities*

Management of tertiary institutions indicate the potential capacity of the institutions to generate income, as the effective management could attract potential clients (students), investors, grants and partners. Abisuga (2013) advocated that tertiary institutions should emphasize on return on investment and not just construct attractive structures. This can however not be achieved if sustainable management strategies of the tertiary facilities are not adopted and maintained. The competition in the educational sector has made it imperative that tertiary institutions must ensure a sustainable management practice of their facilities. Tucker (2013) therefore explains that sustainable facilities management is “being able to manage, implement and deliver an organization’s non-core business services that contribute to the improvement of the economic, social, and physical environment, and, in turn, to the greater environmental sustainability on an organization’s core business objectives” (Pp 242). Tertiary institutions with the overall goal of impacting knowledge through an enhanced learning process, will need a sustainable policy to maintain her facilities.

To enhance satisfaction and improve the learning process therefore, Ajayi, Nwosu and Ajani (2015) opined that increase in quantity and quality of facilities provided in tertiary institutions are also of optimum necessity. Oluwunmi, Akinjare, Ayedun, and Akinyemi, (2012) earlier opined that there is need for the adequacy of tertiary facilities to be measured. This is so as to account for the satisfaction derivable, the sustainability of the management of the facilities and improve on the provision.

Tucker (2013) similarly opined that integrating sustainability principles through practicable sustainable system, should be included in achieving the overall set goals and core vision of organisations. Sustainable facilities management system therefore should be included from the initial stage through the process so as to cut cost, minimise waste, aid ease of maintenance, achieve prompt attention to complaints and expectations of users, create easy operation, return on investment, reduce sick building syndrome and enhance building-friendly and healthy environment (Jaunzens, Warriner, Garner, and Waterman, 2001; Hodges, 2005; and Lee and Kang, 2013).

Radebe, and Ozumba, (2021) however presented four major limitations to sustainability of facilities management in tertiary institutions. The authors opined that management of facilities must be proven by adequate understanding of sustainable principles and prioritising such through their commitment to prompt attention and financial commitments, and the engagement of competent facilities managers. Facilities managers must show their capabilities, through their knowledge, skills and proactive management measures. The top management system of the institutions must equally provide enabling environment and support for the sustainability of the management of facilities.

### **3.0 Methodology**

The methodology for this study is more of design hence; relevant data was collected, interpreted and analysed through a cross-sectional design survey. The target population for this study is the students and staff of both Federal Polytechnic, Ile-Oluji (a government owned institution tagged PUBLIC) and the Ajayi Crowther University, Oyo (a private Institution tagged PRIVATE). The sample frame for this research work was drawn from the whole population of students and staff at both institutions. Structured questionnaires were administered to the respondents. The total of 100 questionnaires each was administered to the respondents of which 69 and 52 questionnaires were retrieved respectively. This makes a response rate of 69% and 52% respectively and a total sum of 60.5% altogether. Data analysis was through a descriptive statistics.

## 4.0 Results and Discussions

### 4.1 Availability of facilities

The following were the data retrieved and analysed on the perception of students as to whether they were satisfied with the services or facilities in their respective hostel.

**Table 1: Availability of facilities in both institutions.**

S/N	Type of Facilities Provided	Available (%)	Not Available (%)	Not Sure (%)	Mean	S.D	Remark	
1	Classrooms	PRIVATE	83.3	11.1	5.6	3.61	0.92	Available
		PUBLIC	94.2	1.4	2.9	3.87	0.57	Available
2	Toilet Facilities	PRIVATE	94.4	0	1.1	3.89	0.47	Available
		PUBLIC	91.3	4.3	2.9	4.00	0.12	Available
3	Library	PRIVATE	100.0	0	0	3.28	1.23	Available
		PUBLIC	97.1	1.1	0	3.91	0.45	Available
4	Laboratory/Studio	PRIVATE	100.0	0	0	3.06	1.26	Available
		PUBLIC	88.4	4.3	5.8	3.23	1.21	Available
5	Sports Facilities	PRIVATE	100.0	0	0	2.00	0.84	Available
		PUBLIC	59.4	17.4	21.7	2.19	1.22	Available
6	Internet Access	PRIVATE	38.9	16.7	44.4	3.67	0.84	Not Available
		PUBLIC	20.3	46.4	31.9	3.93	0.36	Not Available
7	ICT Centre	PRIVATE	94.4	0	0	2.17	1.10	Available
		PUBLIC	92.8	2.9	1.4	2.68	1.40	Available
8	Staff Common Rooms	PRIVATE	38.9	27.8	33.3	3.33	1.19	Not Available
		PUBLIC	46.4	33.3	1.4	3.90	0.52	Available
9	Health Centre/Facilities	PRIVATE	94.4	0	5.6	2.17	1.10	Available
		PUBLIC	89.9	1.4	5.8	2.39	1.18	Available
10	On Campus Student Hostel	PRIVATE	100.0	0	0	1.72	0.75	Available
		PUBLIC	11.6	56.5	31.9	2.13	1.12	Not Available
11	Laundry	PRIVATE	88.9	0	11.1	2.11	0.96	Available
		PUBLIC	1.4	58.0	40.6	2.60	1.34	Not Available
12	Student's Union Building	PRIVATE	94.4	0.0	5.6	1.94	0.87	Available
		PUBLIC	24.6	39.1	36.2	2.42	1.23	Not Available
13	Staff Quarters	PRIVATE	100.0	0.0	0.0	2.11	1.13	Available
		PUBLIC	11.6	53.6	34.8	3.23	1.19	Not Available
14	Waste Management	PRIVATE	83.3	0.0	16.7	3.33	1.14	Available
		PUBLIC	52.2	24.6	20.3	3.26	1.23	Available
15	On Campus Public Transport System	PRIVATE	11.1	33.3	0	1.89	0.90	Not Available
		PUBLIC	88.4	4.3	7.2	2.48	1.32	Available
16	Cafeteria	PRIVATE	100.0	0.0	0	2.50	1.29	Available
		PUBLIC	17.4	40.6	42.0	2.59	1.38	Not Available
17	Private Electricity Augment	PRIVATE	55.6	11.1	33.3	4.22	1.26	Available
		PUBLIC	42.0	23.2	33.3	4.49	0.88	Not Available

The result on Table 1 showed the mean score on the extent to which facilities were provided in both Ajayi Crowther University, Oyo and Federal Polytechnic, Ile-Oluji categorised in this study as Private and Public institutions respectively. Classroom, Toilet facilities, library, laboratory / studio, sports, ICT centre, health centre/facilities and waste management facilities were the available facilities in both institution while internet access was not provided to all in both institutions. However, Item internet access, staff common room and on campus public transport system were the facilities not provided in the private institution while items internet access on campus public transport laundry, student's Union Building, staff quarters, cafeteria and private electricity augment were the facilities not provided in the public institution. The implications are that internet facility is an essential tool for teaching and learning, the lack of which, could jeopardise education system.

### 4.2. Level of efficiency of the facilities provided

The respondents were asked to assess the level of efficiency of the facilities which were made available in their respective institutions. This was to ascertain the quality of facilities applicable to the overall set set goals of the education. The result on Table 2 showed the mean score for the response of students on how efficient the available facilities are to the students.

**Table 2: Level of efficiency of the facilities provided in both institutions.**

S/N	Type of Facilities provided		Very Efficient (%)	Efficient (%)	Not Sure (%)	Poorly Efficient (%)	Not Efficient (%)	Mean	S.D.	Remark
1	Classrooms	PRIVATE	44.4	27.8	11.1	0	16.7	3.83	1.47	Efficient
		PUBLIC	53.6	34.8	5.8	2.9	2.9	4.33	0.93	Efficient
2	Toilet facilities	PRIVATE	72.2	27.8	0	0	0	4.72	0.46	Efficient
		PUBLIC	84.1	13.0	0	2.9	0	4.78	0.59	Efficient
3	Library	PRIVATE	44.4	38.9	16.7	0	0	4.28	0.75	Efficient
		PUBLIC	60.9	33.3	2.9	2.9	0	4.52	0.70	Efficient
4	Laboratory/ studio	PRIVATE	38.9	22.2	22.2	0	16.7	3.67	1.46	Efficient
		PUBLIC	37.6	42.0	8.7	4.3	7.2	3.97	1.15	Efficient
5	Sports	PRIVATE	16.7	16.7	22.2	0	44.4	2.61	1.61	Not Efficient
		PUBLIC	20.2	31.9	11.6	4.3	31.9	3.01	1.57	Efficient
6	Internet Access	PRIVATE	44.4	44.4	5.6	0	5.6	4.22	1.00	Efficient
		PUBLIC	58.0	31.9	4.3	2.9	2.9	4.39	0.93	Efficient
7	I C T Centre	PRIVATE	16.7	22.2	22.2	0	38.9	2.78	1.59	Not Efficient
		PUBLIC	31.9	43.5	7.2	2.9	14.5	3.75	1.33	Efficient
8	Staff Common rooms	PRIVATE	38.9	33.3	16.7	0	11.1	3.89	1.28	Efficient
		PUBLIC	60.9	33.3	2.9	1.4	1.4	4.51	0.76	Efficient
9	Health Centre/facilities	PRIVATE	5.6	22.2	33.3	0	38.9	2.56	1.38	Not Efficient
		PUBLIC	17.4	37.7	17.4	0	27.5	3.17	1.47	Efficient
10	On Campus Student Hostel	PRIVATE	5.6	22.2	38.9	0	33.3	2.67	1.33	Not Efficient
		PUBLIC	0	36.2	11.6	13.0	39.1	2.84	1.57	Not Efficient
11	Laundry	PRIVATE	11.1	22.2	27.8	0	38.9	2.67	1.50	Not Efficient
		PUBLIC	0	23.2	46.4	11.6	18.8	3.55	1.37	Efficient
12	Student's Union Building	PRIVATE	11.1	22.2	22.2	0	44.4	2.56	1.54	Not Efficient
		PUBLIC	18.8	39.1	11.6	0	30.4	3.16	1.54	Efficient
13	Staff Quarters	PRIVATE	0	27.8	27.8	22.2	22.2	3.28	1.45	Not Efficient
		PUBLIC	29.0	52.2	10.1	0	8.7	3.93	1.09	Efficient
14	Waste Management	PRIVATE	44.4	22.2	5.6	0	27.8	3.56	1.72	Efficient
		PUBLIC	46.4	34.8	8.7	0	10.1	4.07	1.22	Efficient
15	On campus public transport system	PRIVATE	16.7	22.2	22.2	0	38.9	2.78	1.59	Not Efficient
		PUBLIC	31.9	34.8	11.6	0	21.7	3.55	1.49	Efficient
16	Cafeteria	PRIVATE	27.8	22.2	27.8	0	22.2	3.33	1.50	Efficient
		PUBLIC	0	21.7	18.8	42.0	17.4	2.51	1.42	Not Efficient
17	Private electricity augment	PRIVATE	5.6	33.3	22.2	27.8	11.1	2.94	1.61	Not Efficient
		PUBLIC	26.0	47.8	8.7	11.6	5.8	3.75	1.14	Efficient

From Table 2, items 1 (Classroom), 2 (Toilet facilities), 3 (library), 4 (laboratory / studio), 6 (Internet), 7 (ICT centre), 8 (staff common room) and 14 (waste management facilities) are the available facilities efficient in the universities under study. However, Items 5 (sports), 7 (ICT centre), 9 (health centre), 10 (on-campus students hostel), 11 (laundry), 12 (students Union Building) , 13 (staff quarters), 15 (on-campus public transport system) and 17 (private electricity augment) are the facilities not efficient in the private institution while items 10 (on-campus students hostel), and 16 (cafeteria) are the facilities not efficient in public institution. Toilet facility was ranked highest in both public and private institutions with mean scores 4.78 and 4.72 respectively, indicating the level of efficiency of this facility as high. This was followed by the provision of library and staff common rooms in public institution with 4.52 and 4.51 mean ratings respectively, while library and internet access were rated 4.28 and 4.22 respectively in the private institution. This showed the level of the efficiency of the facilities to the learning and teaching process. Answering the call of nature can not be denied, thus, toilet facilities are essential as lack or inadequacy of this can bring discomfort and lack of concentration if not duly and promptly attended to. Similarly, library access is a connecting rod to the classroom learning, as both the teacher and the student get abreast with knowledge through the provision of relevant materials in the library. The staff common room was rated as efficient, as relaxation is part of the learning process.

However, a comparison with both institutions indicate a disparity in the level of efficiency as presented in the Table 2 private electricity supply augment was rated as not efficient in the private institution with a mean score of 2.94 but was rated high in efficiency in the public institution with a mean score of 3.75. This indicates that other means of electricity supply available in the public institution, are more efficient than in the private

institution. Others not efficient in the private institution but efficient in the public institution were; on campus transport system, ICT facility, laundry, on-campus student hostel, sports, student union building and health facility. On-campus student hostel were both rated as not efficient in the two schools. This indicates that there is students hostel facility is essential for effective and efficient learning. It makes the students closer to the learning. The private institution has been rated lower in the level of efficiency of facilities provided as compared to the public institution. This could be due to the activities of the government within the education sector to favour government-owned institutions in terms of funding, policy and resources as against the private owned institutions.

#### 4.3. Level of the challenges associated with the facilities

The perception of the challenges that are associated with the facilities provided by the public and private institutions were retrieved. This was to analyse the level of the challenges and compare the results among both institutions.

**Table 3: Level of the challenges associated with the facilities in both institutions**

S/N	Challenges	Institution	Very Poor (%)	Poor (%)	Not Sure (%)	Good (%)	Very Good (%)	Mean	S.D.	Remark
1	Maintenance and Management	PRIVATE	0	11.1	22.2	27.8	38.9	2.94	1.06	Good
		PUBLIC	0	1.4	17.4	29.0	52.2	3.31	0.81	Good
2	Effective Use	PRIVATE	16.7	5.6	27.8	50.0	0	3.11	1.13	Good
		PUBLIC	5.8	4.3	8.7	55.1	24.6	3.90	1.02	Good
3	Quality of Construction Materials Used	PRIVATE	22.2	5.6	16.7	55.6	0	3.06	1.26	Good
		PUBLIC	4.3	5.8	17.4	55.1	17.4	3.75	0.96	Good
4	Prompt response to complaints	PRIVATE	16.7	44.4	22.2	16.7	0	2.39	0.98	Poor
		PUBLIC	4.3	14.5	17.4	50.7	13.0	3.54	1.04	Good
5	Funding	PRIVATE	5.6	5.6	55.6	33.3	0	3.17	0.79	Not sure
		PUBLIC	2.9	10.1	23.2	49.3	14.5	3.62	0.96	Good
6	Act of Nature/ Climate	PRIVATE	5.6	27.8	50.0	11.1	5.6	2.83	0.92	Not sure
		PUBLIC	7.2	17.4	23.2	40.6	11.6	3.31	1.12	Good
7	Procurement issues	PRIVATE	5.6	5.6	38.9	33.3	16.7	3.17	0.98	Good
		PUBLIC	1.4	21.7	15.9	44.9	15.9	3.52	1.05	Good
8	Storage System	PRIVATE	16.7	27.8	33.3	22.2	0	2.61	1.04	Poor
		PUBLIC	8.7	11.6	21.7	42.0	15.9	3.45	1.16	Good

The result on Table 3 showed the response of staff and students on the challenges associated with these facilities in both institutions. All the challenges listed were all well handled in the public institution, however, Prompt response to complaints, funding, act of nature (climatic influences) and Storage System (of excess item for future/ emergency use), with mean ratings of 2.39, 3.17, 2.83 and 2.61 respectively, were the challenges that are poorly handled in the private institution. This could be attributed due to the private nature of funding of the institution where there were no grants or subventions as compared to the federal institution which enjoys Federal government attention. The challenges are however of necessity for a sustainable development and patronise of the education sector.

#### 4.4. Strategies Adopted in the management of the facilities

Management strategies adopted by each institution was examined so as to determine the most adopted means in the management of the facilities.

**Table 4: Strategies adopted in the management of the facilities in both institutions.**

S/N	Institutions	Private (%)	Public (%)
1	Routine Management Inspection	33.3	21.7
2	Outsourcing of Tasks	22.2	11.6
3	In-sourcing of Tasks	33.3	13.0
4	Internal Generating Revenue	38.9	18.8
5	Fine on misuse/abuse	22.2	7.2
6	Payment for use	16.7	14.5
7	<b>Remark</b>	<b>Internal Generating Revenue</b>	<b>Routine Management Inspection</b>

From Table 4, it showed that the most strategy adopted in the private institution in the management of the facilities chosen by the respondents was Internal Generating Revenue while the most adopted strategy in the

management of the facilities revealed by the respondents in the public institution was Routine Management Inspection. The funding which is internally generated was said to be available in the management of the facilities within the private institution as compared with that of the public in terms of finance. This was followed by routine management inspection, in-sourcing of tasks, fine imposed on the misuse or abuse of facilities, outsourcing of tasks and payment for use, in that order. Thus, private institution adopted internal generating revenue as the highest means of managing and funding the facilities, while payment for use of the facilities was the least considered. The Public institution adopted routine management inspection as a strategy in the management of its facilities as it had the highest percentage rate, while fine imposed on the misuse or abuse of facilities was the least rated.

#### 4.5. Sustainability of the management strategies

The management strategies adopted by the institutions is considered necessary in order to assess the sustainability of the approaches. The Table 5 presents the level of sustainability of the management strategies adopted in both institutions.

**Table 5: Sustainability of the strategies in both institutions**

Institution	Much Sustainable (%)	Less Sustainable (%)	Not Sure (%)	Not Sustainable (%)	Mean	S.D	Remark
PRIVATE	27.8	55.6	16.7	0	3.11	0.68	Less sustainable
PUBLIC	55.1	21.7	18.8	4.3	3.24	0.87	Much sustainable

According to result in Table 5, these strategies adopted in the management of the facilities were assessed and were presented as less sustainable in the private institution as compared with the strategies adopted by the public institution which were much sustainable. The less sustainable result in the private institution, could be as a result of maintenance policies put in place to cater for emergency situations at certain seasons, after which, there is a return to the status quo. It could not be sustained probably due to financial limitations, change in administration and management. Public institutions could achieve a sustainable strategy due to long term management policies adopted, as well as federal government subventions and grants enjoyed by the government owned institutions. Each sustainable strategy therefore becomes an policy when it observed to be able to provide for the continual management and prolong the life-cycle of the facilities. An unsustainable strategy may be caused by an emergency rescue which is just for a particular situation and thus could lack the capacity in terms of managerial skill, technical expertise, equipment and materials, or finance for it to be sustainable.

#### 5.0. Recommendation

To improve on the facilities management strategies offered by each of the institutions, the following recommendations are necessary. There should be provision of more funding in both institutions and a budget for the management of facilities. This will assist in proactive measures and not necessarily wait till facilities breakdown before they are attended to. The federal government should release more funds for both private and public institutions, as both can boost both the local and the international rating of the educational system of the country. The proprietors of the private institution should ensure adequate funding as well and ensure the institution competes well in the global educational world.

Effective maintenance policy should be adopted. There should be routine management inspection of the facilities and more pre-emptive maintenance adopted in the supervision and maintenance. Prompt response to complaints and requests regarding the maintenance and management of the facilities should be adopted. Follow ups should be carried out following recommendations after inspection of these facilities. The use of quality materials, good supervision, better storage as well as security of all assets must be facilitated. The need for sensitization of the users to cultivate a maintenance culture of the facilities is to be emphasized. Training and guidance of users can be ensured. There should be surcharges for misuse. Enforce replacement of damaged facility by the person who destroyed it.

The management of some services could be out-sourced as well as ensuring that facilities are handled by experts and the experts are well remunerated for the services rendered. The institutions can outsource more areas on management to private companies for effectiveness and also allow for partnership in the area of build, operate and transfer. (BOT). Privatising should be encouraged.

There is need for the establishment of institutional Estate Maintenance Unit separated from the works unit. This will engage the professional input of Estate Surveyors and Valuers in the management and efficient maintenance of the institutions' facilities. Estate Surveyors and Valuers act professionally, prudently and promptly to the challenges of the property/facility management. Their engagement will also help the institutions in allotting rental spaces for business outlets within the schools, thereby improving the internal generated

revenue of the schools. Other facility professionals can also be included for a comprehensive effective management of the facilities.

There is need to provide good toilet facilities, more classrooms and lecture theatres, sporting facilities, hostel facilities and cafeteria for both staff and students as well. Students Union building should be provided and equipped with modern facilities as this also is good for promotion students social life. This is inclusive way in increasing morals and improving the learning process. We need more material and class room

Upgrade of facilities especially in the development in the electricity and internet access. The electricity supply could be internally generated through the bio gas, solar panelled, generators and inverters sources. The institutions should make internet facilities accessible and easier by providing free range WiFi. This will aid teaching, intellectual connection and access to current data in research in the global world.

The administrators and management team of both the private and public institutions should empower the works and service unit with quality and quantity staff and necessary equipment to function well. Recruit more cleaners, gardeners and other artisans for effective and efficient management of the facilities.

Improve in the transport system into the campus. This will make movement easier and effective to the learning process. It will equally reduce any form of traffic congestion that may jeopardise academic activities.

## 6.0. Conclusion

The study presented the types of facilities available at both the public and private institutions and considered the level of efficiency of the facilities, the challenges associated with the facilities, strategies adopted in the management of the facilities as well as the sustainability of the strategies. Maintenance of facilities in a property is therefore essentially to retain its integrity; values for investment, aesthetics, safety and durability. The inconsistency in maintenance culture and the backlog of deferred maintenance of facilities in tertiary institutions reveal an array of dilapidated facilities, leading to a 'crash programme' during special occasions, inaugural lectures, convocations, other ceremonials and accreditation exercises. The private institutions need to hop their game in the effective management of facilities as their financial capacity could not be compared with that of the public owned schools, but can compete well in terms of management of the facilities if given the needed boosts. The nonchalance of users in the use and maintenance of facilities available should be highly discouraged. For sustainable development of tertiary institutions therefore, the improvement of facilities with hitech innovations and systematic maintenance and management policies, will absolutely attract global relevance and enhance academic education and research performance.

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## Conflicts of Interest

There is no interest whatsoever within the scope of this work including paid honorarium or stock ownership which may constitute any conflict.

## Authorship

The authors contributed substantially at varying degrees through the conception and design, data collection, analysis and interpretation, drafting of the manuscript, the critical review, as well as the final approval for publication.

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