Building Review
Original Article
ISSN (Online): 2536-6823

International Journal of Multidisciplinary Research in Academic Studies and Field Practices (IJMRASFP), 2025. 4(2), 91-107
Volume 4, Issue 2

Estate Management Journal | Accepted: 13 August, 2025 | Published: 31 August, 2025

Assessing Facility Management Performance in Tertiary Institutions in Oyo State, Nigeria: Insights for Sustainable Public Infrastructure Management

Adebare Samuel ABEGUNDE

[1]Department of Estate Management, Lead City University, Ibadan, Nigeria.

Submit Manuscripts through: https://www.internationalpublishersijmrasfp.com/call-for-papers

ABSTRACT

Facility Management has evolved from a narrow focus on the maintenance of buildings and equipment to a multidimensional discipline encompassing space planning, sustainability, energy efficiency, and the integration of technology in support of institutional goals. This study assesses FM performance in selected tertiary institutions in Oyo State, Nigeria, specifically the University of Ibadan, Lead City University, The Polytechnic Ibadan, and Ibadan City Polytechnic. Using a descriptive survey research design, primary data were collected from 517 students and 280 FM personnel through structured questionnaires. The study investigates the influence of institutional affiliation and educational qualification on satisfaction levels and strategic preferences. Using survey data from 480 students and 250 FM personnel, the research employed cross-tabulation and chi-square tests to assess relationships among variables. The findings revealed a statistically significant association between the student's institution and their level of satisfaction with FM services. Notably, 93% of students at the University of Ibadan reported low satisfaction, while The Polytechnic Ibadan and Ibadan City Polytechnic recorded satisfaction rates of 89% and 98%, respectively. Similarly, a significant relationship was observed between educational qualification and preferred FM strategy. In-house FM was the dominant strategy, but respondents with bachelor's degrees preferred a hybrid model. The study concludes that institutional type and stakeholder competence significantly shape FM outcomes. It recommends standardized FM frameworks, targeted capacity building, and strategic reform, especially in public universities, to improve infrastructure performance and user satisfaction sustainably.

.

Keywords: Facility management performance, public infrastructure, building maintenance, sustainability.

Article ID: IJMRASFP-BAE-1128437

1 INTRODUCTION

Facility Management (FM) is a discipline that focuses on the efficient and effective delivery of support services for the built environment. It is concerned with the coordination and management of various systems, services, and activities that are necessary for the operation of buildings, ensuring that these systems perform optimally to meet the needs of an institution. Historically, FM was confined to the maintenance of buildings and equipment. However, with increasing complexity in infrastructure and the growing need for sustainability, FM now involves a broader scope, which includes space planning, energy management, safety compliance, and the integration of technology in building systems (Opoku & Lee, 2022).

In educational institutions, FM goes beyond merely maintaining buildings and equipment. It involves creating an environment that supports the institution's educational goals and ensures the comfort, safety, and well-being of students, staff, and faculty (Gwabavu & Shakantu, 2024). A well-maintained campus is essential for attracting prospective students, enhancing the institution's reputation, and ensuring that teaching and learning processes are not hindered by physical constraints. In tertiary institutions, the responsibilities of FM include managing lecture halls, dormitories, libraries, research facilities, and administrative buildings (Mahmoud, et al., 2024). These facilities must be conducive to learning and meet the diverse needs of students, including accessibility, comfort, and technological infrastructure. The effective management of these resources requires a collaborative approach between FM departments and institutional leadership to ensure that facilities are designed, maintained, and upgraded according to the needs of the academic community.

In addition to maintaining infrastructure, FM also plays a key role in ensuring the safety and sustainability of campuses. Sustainable practices, such as energy-efficient building systems, waste management, water conservation, and the use of renewable resources, are increasingly becoming integral to FM (Abegunde & Fayomi, 2025). Educational institutions are adopting these practices as part of their commitment to environmental sustainability, which not only reduces operational costs but also aligns with global efforts to address climate change and other environmental challenges (Leal, et al., 2022).

Tertiary institutions in Nigeria face numerous challenges related to facility management, many of which stem from inadequate funding, poor infrastructure planning, and insufficient training for facilities management staff (Ayoko, et al., 2023). One of the most pressing challenges is the lack of adequate financial resources allocated for facilities management. Nigerian tertiary institutions often operate with limited budgets, and as a result, the maintenance and upgrading of facilities are frequently neglected or deferred. Furthermore, the lack of a standardized approach to facility management means that each institution often adopts different strategies, which can lead to inefficiencies and poor performance. Many institutions in Nigeria still rely on outdated infrastructure, which further compounds the problem. For example, many campuses suffer from inadequate electrical systems, poor water supply, faulty drainage systems, and inadequate health and safety measures, all of which negatively impact the learning environment.

Another significant challenge is the absence of a comprehensive facilities management framework that aligns with the needs of the institution and its users. Facilities managers in Nigerian institutions often face a lack of training and professional development opportunities, which affects their ability to manage complex systems and integrate new technologies into the building infrastructure (Ebekozien, et al., 2024).

In the context of tertiary institutions, the role of FM is crucial for ensuring that campuses provide the optimal environment for academic and non-academic activities (Ramu, et al., 2022). Universities and colleges, especially in developing economies like Nigeria, face numerous challenges in managing facilities effectively, which directly affects the quality of education, student satisfaction,

and overall institutional performance. This study seeks to answer key questions about the current state of FM performance in Oyo State's tertiary institutions and explore how these practices can be improved to promote sustainability and support public infrastructure development.

This study also assesses the facility management performance of selected tertiary institutions in Oyo State, Nigeria, focusing on how well their facilities support the core functions of teaching, learning, and research. By exploring the physical characteristics of existing facilities, FM strategies, and performance levels, this research aims to provide actionable insights that can help enhance FM practices in tertiary institutions. Furthermore, it will explore how sustainability practices can be integrated into FM systems, ensuring that these institutions align with the principles of sustainable development and contribute to the long-term sustainability of public infrastructure.

2. LITERATURE REVIEW

2.1 Theoretical Underpinning

2.1.1 Systems Theory

Systems Theory, originally developed by Ludwig von Bertalanffy (1968), posits that organizations are composed of interrelated and interdependent parts that must work synergistically to achieve optimal performance. In the context of facility management, this theory provides a relevant lens through which to examine how infrastructure units, management departments, and facility users interact within a broader institutional system.

Within tertiary institutions, facility management involves the coordinated efforts of multiple subsystems; such as physical planning units, works and services departments, procurement units, and end users (students and staff). These components must function cohesively to ensure the delivery of quality infrastructure services, which in turn affect academic productivity, safety, and institutional sustainability. Systems Theory supports the idea that a breakdown in one component (e.g., poor maintenance response time) can adversely affect the entire system's performance, including student satisfaction and learning outcomes.

In this study, Systems Theory underpins the investigation of the interconnected roles of facility management staff and students in determining facility performance. It emphasizes a holistic approach, encouraging the assessment of how internal structures, feedback loops, and user engagement collectively influence infrastructure outcomes in public tertiary institutions in Oyo State.

2.2 Empirical Review

FM is an aspect of education system that is generally being overlooked in Nigeria, and when new buildings are constructed and taken over by the appropriate authorities, practically no attention is paid to the maintenance of such buildings (Adegoriola, 2023). Several educational buildings built for half a decade have never undergone renovation or any form of modernization despite the changes in the educational system. Over the years, most educational administrators/managers complained that physical facilities available for academic and non-academic activities are grossly inadequate, majority are regarded as architecturally obsolete; they could no longer satisfy present day educational needs and, therefore, cannot contribute to functional learning (Ebekozien, et al., 2024). Educational Facilities Laboratories describes such facilities as rigid, inaccessible, sterile, formal, isolated, stark, immobile and permanent. Hence, educational buildings, especially in the universities, need rapt attention in terms of provision of functioning facilities to meet the increasing demands for higher education in Nigeria.

A scholar assess FM performance in higher education properties; the study presents the characteristics of important aspects of a performance evacuation approach related to higher education properties and discusses the framework based on the balanced scorecard to measure performance

relating to higher education establishment (Hassanain, et al., 2021). Another scholar investigated the FM practices in higher education buildings with a case study in the USA and established that the structured and organized FM has the potential to improve the physical performance and appearance of a building and its systems, as well as increase the user's level of satisfaction and improve efficiency with which the building is maintained and operated (Mahmoud, et al., 2024). A study in the USA appraises maintenance risk reduction for an effective FM. The paper examined the physical conditions and maintenance deficiencies of heating ventilation and air conditioning type of equipment using failure checkpoint, found out that the tool helped to assess checkpoints on the components and identified the potential risk component and its impact (Che-Ghani, et al., 2023).

A study evaluated a strategic standpoint on maintenance taxonomy, and the paper offers a new methodical classification of maintenance, which has a strong scientific foundation and can be commonly accepted as a standard in the field of maintenance and FM (Patil, et al., 2022). The study of Lind and Muyingo in Sweden evaluates building maintenance strategies with focus on planning under uncertainty. The paper establishes that there are a number of specific uncertainties that affect building maintenance planning which make more detailed long-term plans less meaningful. The paper proposes a new structure for long-term strategies and goals for various buildings/components and a short-run adjustment when new information is available (Lind & Muyingo, 2012). Hebert and Chaney's paper focuses on enhancing FM through generational awareness, and the study affirms that the knowledge of generational differences was unimportant and suggested that a successful management of generational differences in the workplace has the potential to improve the efficiency and viability of an enterprise including facilitating knowledge management (Hebert & Chaney, 2011). A scholar appraises cost decision-making in building maintenance practice in Malaysia and concludes that maintenance performance emanates from the insufficient allocation of maintenance cost (Shah-Ali, 2009). Factors considered in the allocation of maintenance costs are availability of funding, client's preference and economic situation.

In Nigeria, a scholar evaluated the maintenance practices among users of residential buildings. The study found that most of the buildings do not have a maintenance manual, and the economy is a major factor affecting the practice of maintenance among users (Odediran, et al., 2012). Another scholar appraise the FM practice in South– South region of Nigeria. The study explored the level of awareness of FM and factors influencing the practice. They further evaluate the outsourcing of FM services in Nigeria's public universities (Olapade & Ekemode, 2018). A researcher appraises factors influencing the role of Nigerian estate surveyors in FM and establish that training in FM and type of the organization managed by the estate surveyor are significant factors that influence estate surveyors' participation in the areas of core competence in FM (Adewunmi, et al., 2009). A study examines the need for an effective facility management in schools in Nigeria (Ebekozien, et al., 2024). The paper suggests the methodologies for FM and that there is a relationship between the quality of the educational facilities and the quality of the products of the institution. A scholar assessed factors affecting maintenance management of public hospital buildings in Lagos State Nigeria. The study ranked insufficiency of fund for maintenance programmes as a significant factor among others. It appears that there is a paucity of research works that evaluate FM with respect to its practices, factors influencing the practices and strategies for sustaining institutional facilities in the Nigerian public institutions of learning (Adenuga, et al., 2007).

Maintaining new buildings, renovating and modernizing the old ones require considerable expertise and commitment of human and material resources. This is because changes in weather conditions and lack of maintenance culture are responsible for the ageing and deterioration of educational buildings and equipments (Hauashdh, et al., 2022). However, most educational administrators/managers who constantly use educational facilities lack the knowledge of facilities maintenance planning.

Consequently, they fail to integrate facility maintenance into the general management, and repairs take place only when problems arise because of the breakdown of the existing facility. The most fundamental problem in FM is lack of policy guidelines for infrastructural development in educational facilities (Temeljotov, et al., 2021). This policy is what some scholars cited in a study and describe as authoritative communication of expected behaviour for individuals in certain positions under specific conditions. The 21st Century School Fund states that the policy agenda should entail an increase in public participation in facilities planning, improve FM including maintenance and improvement programme and secure adequate and equitable facilities funding.

A lack of insufficient organizations in FM is a major factor influencing FM, and this usually leads to postponement of major repairs and replacements of facilities. Others include a lack of centralized information on the assessment of deficiencies and conditions appraisal of the facilities, and these make the maintenance projects to be carried out at the cost of critical replacements and repairs. In the USA, lack of action towards the initial planning, design and construction costs of a facility is the key challenge to FM in universities and colleges (Rudden, 2010).

In Nigeria, a researcher investigated ranges of factors that influence the participation of estate surveyors and valuers (property managers) in FM (Adewunmi, et al., 2009). Although the study was not directed at educational institutions, it was found that training in FM and type of business of the organization were significant factors that influence surveyors' participation in areas of core competence in FM. A researcher impliedly identifies size of an estate and type of business of an organization as parts of the influencing factor for professional participation in FM (Adewunmi, et al., 2009). Ndlovu (2021), opined that the training, environmental policies/legislation and FM expertise are necessary to create a very good working environment for cost control services and monitoring of performance of FM services in order to ensure an effective economic climate of the country. Gingue (2022), considered the extent of contracting out of service, physical features of facility, the existing culture of an organization and client demands/expectations as parts of the factors influencing FM practice. It is important to state that most of the foregoing studies were not situated within tertiary institutions.

Moreover, developmental issues like globalization, information technology, employee expectations, regional economy, property market, general business environment, market maturity and procurement systems are the prevailing factors in South East Asian (Felker, 2003). Adegoriola (2023) also indicates that lack of knowledge of managerial processes, nonchalant or passive attitudes to facilities decaying, unavailability of trained experts, lack of adequate skills and inadequate funding are prevailing factors influencing FM practices, especially in Nigeria. This reinforced the opinion of Ogunbayo et al. (2022) that maintenance management in the public sector has suffered from lack of funds and general neglect of the buildings for a considerable time. Overcrowding has also led to the deterioration of the facilities installed, while some scholars equally affirm that public buildings are in poor and deplorable structural and decorative conditions because they are left as soon as commissioned to face premature but steady and rapid deterioration, decay and dilapidation without formal arrangements for management. Furthermore, factors identified by Ikediashi & Okwuashi (2015) that influence FM in South– South Nigeria include lack of awareness, proper regulation and quality control. Others include process of procurement, dearth of skill/manpower, mistrust between managers and service providers, type of employer, political barrier/government intervention and personal and labour issues.

The development of broad educational goals and specific objectives that will encompass FM is equally fundamental. An effective FM plan ought to commence with the educational philosophy that serves the needs of the individual in a dynamic and knowledge-based economy. The need for FM in university educational facilities cannot be overemphasized. The management responsibilities in FM require collective efforts and management processes which involve planning, organizing, decision-

making, leading, coordinating and controlling (Galamba & Nielsen, 2016). The broadened educational goals and objectives as a result of changes in socio-economic development have necessitated the involvement of several minds in the FM process. It also requires experts' input from a wide range of stakeholders and collaborative efforts, which facilitate new ideas and perspectives in FM.

Planning is the process of preparing a set of decisions for action in the future directed at achieving goals by optional means (Bryson, 2018). Therefore, a plan for FM must be an integral part of the overall organizational/institutional master plan which should include budget priorities for FM. Facilities managers face the challenges of planning and adapting the existing buildings to meet educational requirements and maintaining them to attain the longest and most cost-effective life from the facilities. Strategic planning must also be accorded priority for institutional facilities to be sustained which should encompass critical stages. This plan should cover assemblies of all relevant facts about the organization's objectives, needs and policies, a review of resources processes, systems and the physical assets themselves, together with their attributes in terms of space, functions and utilization. The second is the solution stage which assembles criteria for judging options, evaluating these against the objectives of the organization and develops the facility management strategy. Implementation stage completes the strategy development process through the establishment of an implementable plan that incorporates the key elements of procurement, training and, importantly, communication (Lavy, 2008).

Facility performance appraisal is becoming a formal and regular operation (Zendehdel-Nobari, et al., 2021). Performance optimization in FM should allow the indoor environment to support organizational business goals in the most effective, efficient and equitable way. As FM becomes a statement of the actions (process) by which organizations deliver and sustain quality services in built environments (space) to meet strategic needs of stakeholders (people), it ensures buildings, system supports and core operations contribute to business achievements, despite changing conditions. A complete facility assessment report contains information on the existing conditions, the residual service life of components, funding documents concerning long- and short-term maintenance and renewal forecasts and recommendations (Grussing, 2015). In addition, facility auditing must also be given a priority because planning cannot be meaningfully carried out without accurate information which should be collected through facility auditing. Planning Guide for Maintaining School Facilities describes facility audit as a comprehensive inventory of educational facilities that provides a standard method for establishing baseline information about the components, policies and procedures of a new or existing facility. The facility audit also helps planners, managers and staff know what is available, its conditions, service Facilities Management Practices history, maintenance needs and location; provides facts not guess work to inform plans for maintaining and improving educational facilities; establishes a baseline for measuring facilities maintenance progress; and allows an in-depth analysis of product life cycles to occur on a routine basis (Talamo & Bonanomi, 2015).

Outsourcing of FM services in the universities has the capacity to improve the overall service delivery in the universities and has already gained wide acceptance among the universities globally (Ikediashi, & Aigbavboa, 2019). The International Association of Outsourcing Professionals reports that the global outsourcing industry is presently worth over $1 trillion annually with India capturing a lion share of the market (Jain-Palvia, 2017).

3 METHODOLOGY

This study adopted a descriptive survey research design to assess facility management performance across selected tertiary institutions in Oyo State, Nigeria. The survey approach was considered appropriate as it enabled systematic observation and collection of standardized responses from respondents to evaluate their perceptions and experiences. The target population comprised students and staff from four purposively selected institutions; University of Ibadan, Lead City

University, The Polytechnic Ibadan, and Ibadan City Polytechnic, were chosen based on their institutional diversity and urban relevance within the state. Specifically, the sample included users of facilities (students) and personnel from the Physical Planning Units and Works & Services Departments, who are directly involved in facility management.

To determine the appropriate sample size, Taro Yamane's formula for finite populations was applied, yielding 398 respondents for students and 215 for the maintenance staff. To account for non-responses and potential errors in questionnaire completion, both figures were increased by 30%, resulting in final sample sizes of 517 and 280 respectively. A stratified random sampling technique was employed to ensure representation across the identified strata, while proportionate sampling was used to allocate samples to each institution according to their population sizes.

The primary data collection instrument was a structured questionnaire, tailored to capture insights on physical facility characteristics, facility management strategies, performance indicators, and influencing factors. Validity of the instrument was ensured through expert review in facility management, and construct validity was confirmed via pilot testing, with Average Variance Extracted (AVE) values exceeding the recommended threshold of 0.5. Discriminant validity was established using the HTMT criterion, where all values fell below the 0.90 benchmark. Reliability testing using Cronbach's alpha produced coefficients of 0.774 for facility management, 0.747 for student performance responses, and 0.795 for maintenance unit responses, indicating strong internal consistency. Data obtained from the survey were quantitatively analyzed to draw conclusions on facility management performance and its implications for sustainable public infrastructure management in the state.

To assess whether students' satisfaction with facility management varies significantly across different tertiary institutions in Oyo State, a chi-square test of independence was employed. This test was chosen because both the independent variable (student institution) and the dependent variable (facility management satisfaction level) are categorical. Responses were recoded into two categories; Low and High satisfaction levels, based on aggregate satisfaction scores. This recoding ensured statistical validity by eliminating low expected cell counts.

Also, in evaluating the factors that influence facility management (FM) strategy preferences among maintenance personnel in tertiary institutions across Oyo State, a chi-square test of independence was conducted to examine the association between educational qualification and preferred FM strategy. This relationship is particularly relevant given that FM performance is often driven not only by institutional policy but also by the qualifications and competencies of key personnel involved in strategy formulation and implementation.

Educational qualification was categorized into distinct levels (ND, HND, B.Sc., M.Sc., and PhD), while FM strategy preferences were classified as outsourcing, in-house, or a combination of both. The rationale for exploring this relationship lies in understanding whether individuals with higher academic qualifications tend to favor particular management approaches, which may reflect their training, exposure, or perceived effectiveness of these strategies.

This analysis directly supports the overarching objective of the study, assessing FM performance in relation to internal institutional capacities. A statistically significant association would suggest that educational background plays a role in shaping strategic decisions about FM, with implications for staff development, policy formulation, and the sustainability of public infrastructure management. Conversely, a non-significant result would indicate that other factors, such as institutional culture or experience, may be more influential in FM strategy choice.

4 Results and Discussion of Findings

Table 1: Demographic Characteristics of Student Respondents

Variables	Category	Frequency	Percentage
Gender	Male	196	40.8%
	Female	284	59.2%
	Total	480	100%
Student Institution	University of Ibadan	248	51.7%
	Lead City University	43	9.0%
	The Polytechnic Ibadan	137	28.5%
	Ibadan City Polytechnic	52	10.8%
Age	Less than 20 years	189	39.4%
	20-25 years	112	23.3%
	26-30 years	100	20.8%
	Above 30 years	79	16.5%
Level of Education	ND	124	25.8%
	HND	65	13.5%
	BSc	180	37.5%
	MSc	88	18.3%
	PhD	23	4.8%

Source: Field Survey Results, 2025

This section consists of background and respondents' information that describes basic characteristics such as gender of the respondents, institution, age, and level of education, the results are presented in Table 1. Accordingly, the profile of gender indicated that 196 respondents representing 40.8% were male, while, 284 respondents representing 59.2% were female, indicating that most of the respondents were female. 248 respondents, representing 51.7% are students of University of Ibadan, 43 respondents, representing 9.0% are students of Lead City University, Ibadan, 137 respondents, representing 28.5% are students of The Polytechnic of Ibadan, and 52 respondents, representing 10.8% are students of Ibadan City Polytechnic. Also, 189 respondents representing 39.4% were between less than 20 years of age, 112 respondents representing 23.3% were between 20-25years, 100 respondents representing 20.8% were between 26-30years, and 79 respondents representing 16.5% were between above 30years, indicating that most of the respondents were between the age ranges below 20years. This suggests that this study mainly involves younger individuals, possibly undergraduates.

Furthermore, 124 respondents representing 25.8% has a national diploma (ND), 65 respondents representing 13.5% has a higher national diploma (HND), 180 respondents representing 37.5% has a bachelor's degree (BSc), 88 respondents representing 18.3% has a master's degree (MSc), and

23 respondents representing 4.8% has doctorate degree (PhD). This diversity in educational levels among the respondents provides a broad perspective.

Table 2: Demographic Characteristics of Maintenance Unit

Variables	Category	Frequency	Percentage
Gender	Male	235	94.0%
	Female	15	6.0%
Institution	University of Ibadan	115	46.0%
	Lead City University	35	14.0%
	The Polytechnic Ibadan	70	28.0%
	Ibadan City Polytechnic	30	12.0%
Age	20-30 years	79	31.6%
	31-40 years	85	34.0%
	41-50 years	43	17.2%
	51years and above	43	17.2%
Marital Status	Single	58	23.2%
	Married	107	42.8%
	Divorced	68	27.2%
	Widow	17	6.8%
Educational Qualification	ND	30	12.0%
	HND	70	28.0%
	PGD	34	13.6%
	B.TECH/BSC	38	15.2%
	M.TECH/MSC	71	28.4%
	PHD	7	2.8%
Area of Discipline	Engineering	97	38.8%
	Sciences	39	15.6%
	Health	31	12.4%
	Environmental Tech.	47	18.8%
	Humanities	16	6.4%
	Administration	10	4.0%
	Office & Inform. Mgt.	10	4.0%
Certification	Nigerian Institute of Quantity Surveyors (NIQS)	43	17.2%
	Nigerian Institute of Building (NIOB)	56	22.4%
	Nigerian Institute of Architects (NIA)	38	15.2%
	Nigerian Institute of Town Planners (NITP)	43	17.2%
	Nigerian Institution of Estate Surveyors and Valuers (NIESV)	31	12.4%
	Nigerian Society of Engineers (NSE)	9	3.6%

Source: Field Survey Results, 2025

This section consists of background and respondents' information that describes basic characteristics such as gender of the maintenance unit, institution, age, marital status, educational qualification, and area of discipline, the results are presented in Table 2. Accordingly, the profile of gender indicated that 235 respondents representing 94.0% were male, while, 15 respondents representing 6.0% were female, indicating that most of the respondents were male, which implies that there is gender diversity in the maintenance unit. 115 respondents, representing 46.0% are in the maintenance unit of University of Ibadan, 35 respondents, representing 14.0% are in the maintenance unit of Lead City University, Ibadan, 70 respondents, representing 28.0% are in the maintenance unit of The Polytechnic of Ibadan, and 52 respondents, representing 10.8% are in the maintenance unit of Ibadan City Polytechnic. Also, 79 respondents, representing 31.6% were between 20-30years, 85 respondents, representing 34.0% were between 31-40years, 43 respondents, representing 17.2% were

between 41-50years, and 43 respondents, representing 17.2% were between 51years and above, indicating that most of the respondents were between 31-40years; this information can be crucial for workforce planning, training, and career development initiatives tailored to the age group that constitutes the majority of the maintenance unit.

Furthermore, 58 respondents, representing 23.2% are single, 107 respondents, representing 42.8% are married, 68 respondents, representing 27.2% are divorced, and 17 respondents, representing 6.8% are widowed. The marital status of maintenance unit members varies, with a significant proportion being married (42.8%). Understanding the marital status of the workforce can have implications for designing employee benefits and support programs. 30 respondents, representing 12.0% has national diploma (ND), 70 respondents, representing 28.0% has a higher national diploma (HND), 34 respondents representing 13.6% has PGD, 38 respondents, representing 15.2% has B.TECH/BSC, 71 respondents representing 28.4% has MTECH/MSC, and 7 respondents representing 2.8% has doctorate degree (PhD). The educational background of the maintenance unit is diverse, with the majority having at least a Higher National Diploma (HND) (28.0%) or a Master's degree (MTECH/MSC) (28.4%). This diversity in educational qualifications provides insights into the skills and expertise within the maintenance unit. Also, the distribution across different disciplines, such as Engineering (38.8%) and Sciences (15.6%), provides information on the academic backgrounds of the maintenance unit members. This information can be valuable for understanding the interdisciplinary nature of the maintenance workforce.

Extensively, 43 respondents, representing 17.2% has certificate in NIQS, 56 respondents, representing 22.4% has NIOB, 38 respondents, representing 15.2% has NIA, 43 respondents, representing 17.2% has NITP, 31 respondents, representing 12.4% has NIESV, 9 respondents, representing 3.6% has NSE, while 30 respondents, representing 12.0% has no certification. A significant portion of the maintenance unit has certifications from professional institutions, such as the Nigerian Institute of Quantity Surveyors (NIQS) and Nigerian Institute of Building (NIOB). This indicates a commitment to professional development and specialization within the maintenance field.

The following hypothesis were formulated in the null form: There is no significant association between student institution and their level of satisfaction with facility management.

Table 3: FM Satisfaction Level

			FM Satisfaction Level		**Total**
			Low	**High**	
Student Institution	University of Ibadan	Count	230	18	248
		Expected Count	133.3	114.7	248.0
	Lead City University	Count	12	31	43
		Expected Count	23.1	19.9	43.0
	The Polytechnic Ibadan	Count	15	122	137
		Expected Count	73.6	63.4	137.0
	Ibadan City Polytechnic	Count	1	51	52
		Expected Count	28.0	24.1	52.0
Total		**Count**	**258**	**222**	**480**
		Expected Count	**258.0**	**222.0**	**480.0**

Source: Field Survey Result, 2025

Table 3 presents the cross-tabulation of facility management (FM) satisfaction levels (categorized as Low and High) across four selected tertiary institutions in Oyo State. The results

indicate notable variations in students' perceptions of FM performance across institutions. At the University of Ibadan, a predominantly public institution, 230 out of 248 students (approximately 93%) reported low satisfaction with FM services, considerably higher than the expected count of 133.3. In contrast, The Polytechnic Ibadan and Ibadan City Polytechnic reported substantially higher levels of satisfaction. Specifically, 122 out of 137 students (89%) at The Polytechnic Ibadan and 51 out of 52 students (98%) at Ibadan City Polytechnic rated their satisfaction as high, both figures exceeding their respective expected counts. Lead City University, a private institution, had a more balanced distribution, with 31 students expressing high satisfaction and 12 reporting low satisfaction.

Table 4: Chi-Square Tests for FM Satisfaction Level

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	320.369[a]	3	.000
Likelihood Ratio	378.174	3	.000
Linear-by-Linear Association	296.417	1	.000
N of Valid Cases	480		

Source: Field Survey Result, 2025

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 19.89.

Table 4 confirms the statistical significance of these observed differences. The Pearson Chi-Square value of 320.369 with 3 degrees of freedom and a p-value of .000 ($p < .001$) indicates a highly significant association between student institution and FM satisfaction level. The likelihood ratio and linear-by-linear association tests further support this conclusion, with similarly significant results. Importantly, none of the expected counts fell below the minimum threshold of 5, ensuring the reliability of the chi-square analysis.

These findings suggest that FM satisfaction is not evenly distributed across institutions. Public institutions like the University of Ibadan may be facing substantial FM performance challenges, while polytechnic institutions appear to be outperforming in this regard. The significant association highlights the need for targeted policy interventions and resource allocation to improve FM outcomes, particularly in underperforming institutions, in order to support sustainable public infrastructure management across the state's tertiary education system

Table 3 presents the cross-tabulation of FM satisfaction level by student institution. The observed counts differ substantially from the expected counts, suggesting that satisfaction levels are not evenly distributed across institutions. The chi-square test in Table 4 supports this observation. The Pearson Chi-Square value of 320.369 ($df = 3$, $p < .001$) indicates a statistically significant association between student institution and facility management satisfaction level. None of the cells had an expected count less than 5, confirming the test's validity.

This result leads to the rejection of the null hypothesis, thereby confirming that student satisfaction with facility management is significantly influenced by the institution they attend. This variation highlights disparities in FM performance among institutions and underscores the need for standardized, sustainable facility management practices in the state's tertiary education sector.

The hypothesis below was tested in the null form: There is no significant association between educational qualification and preferred facility management strategy.

Table 5: Cross Tabulation – Educational Qualification vs. FM Strategy

Educational Qualification	Outsourcing	In-house	Both	Total
ND	0	24	6	30
HND	0	56	14	70
PGD	1	27	6	34
B.Tech/B.Sc.	0	13	25	38
M.Tech/M.Sc.	0	63	8	71
PhD	0	7	0	7
Total	**1**	**190**	**59**	**250**

Source: Field Survey Result, 2025

Table 6: Chi-Square Test Result

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	53.340	10	.000
Cramér's V	0.327	–	.000
Number of Valid Cases	250		

Source: Field Survey Result, 2025

To evaluate whether the educational background of facility management personnel influences their strategic preferences, a chi-square test of independence was conducted. As shown in Table 5, the majority of respondents across all educational levels preferred the in-house strategy, with M.Sc. holders (88.7%) and HND holders (80%) showing particularly strong support for it. However, those with a B.Sc./B.Tech qualification notably preferred a hybrid strategy combining outsourcing and in-house approaches (65.8%). This variation in strategic preference prompted further statistical analysis.

The chi-square results in Table 6 confirmed a statistically significant association between educational qualification and preferred facility management strategy, $\chi^2(10, N = 250) = 53.340$, $p < .001$. The moderate Cramér's V value of 0.327 suggests a meaningful relationship. This implies that stakeholders' educational levels play a role in shaping their perspectives on effective facility management strategies in tertiary institutions. This insight is vital for policy design and strategic alignment in sustainable infrastructure management, as it highlights the need to consider educational diversity when developing or adopting FM models in public institutions.

4.1 Discussion of Findings

The study explored facility management (FM) performance across selected tertiary institutions in Oyo State and revealed significant institutional and professional disparities in satisfaction levels and strategic preferences. These findings provide valuable insights for sustainable public infrastructure policy-making and institutional capacity development.

The first major finding relates to student satisfaction with FM services. The results of the chi-square analysis revealed a statistically significant association between the tertiary institution attended and the level of satisfaction with FM ($\chi^2(3, N = 480) = 320.369$, $p < .001$). As shown in Table 3, public institutions such as the University of Ibadan reported a disproportionately high number of students (230 out of 248) expressing dissatisfaction with FM services, while institutions like The Polytechnic Ibadan and Ibadan City Polytechnic recorded overwhelmingly positive satisfaction ratings. This divergence suggests systemic issues in FM implementation within larger, publicly funded universities compared to more agile polytechnics or private institutions.

This finding aligns with prior research by Amaratunga & Baldry (2000), who emphasized the link

between effective FM and user satisfaction, noting that poor maintenance strategies in public institutions often lead to degraded infrastructure quality and user dissatisfaction. Furthermore, Nutt (2004) noted that FM effectiveness is typically more visible in smaller or semi-autonomous institutions where accountability mechanisms are stronger, a point consistent with the strong satisfaction levels observed at Ibadan City Polytechnic. Similarly, Danjuma et al. (2023) reported that polytechnic institutions in Nigeria tend to be more adaptive in FM operations, often due to decentralized decision-making and the ability to outsource services quickly.

The implications of this finding are critical. Given the role of tertiary institutions in national development, persistent dissatisfaction with FM in flagship public universities may hinder the learning environment and contribute to a decline in institutional reputation and effectiveness (Ikediashi, et al., 2020). These results suggest an urgent need for strategic review and resource reallocation toward FM systems in underperforming institutions to ensure equity in infrastructure performance and user satisfaction.

The second significant finding concerns the relationship between educational qualification and preferred FM strategy. As shown in Table 5, while in-house FM strategies were predominantly preferred across all qualification levels, individuals with bachelor's degrees (B.Sc./B.Tech) showed a notable preference for a hybrid strategy that integrates both in-house and outsourced approaches. This observed difference was statistically confirmed via the chi-square test ($\chi^2(10, N = 250) = 53.340$, $p < .001$), with a Cramér's V value of 0.327 indicating a moderate effect size.

This finding is in line with the work of Yu, & Kang, (2009), who highlighted that educational background significantly influences FM professionals' strategic orientation. Professionals with broader academic exposure may lean toward hybrid models due to an understanding of cost-efficiency, innovation, and performance-based service delivery. Similarly, Chen (2014) observed that strategic FM decisions often depend on an individual's familiarity with both theoretical and practical dimensions of asset management, which varies by education level.

The preference for in-house strategies by those with postgraduate qualifications could reflect institutional conservatism or adherence to perceived job security within the public sector, where internal control is valued over flexibility. However, the shift toward hybrid models by mid-tier graduates suggests a growing awareness of the benefits of blended strategies, including scalability, cost control, and service optimization (Van-Sprang & Drion, 2020).

Taken together, these findings underscore the importance of tailoring FM strategies to institutional context and stakeholder competence. There is a pressing need for capacity-building programs, particularly in public institutions, to promote innovative and contextually relevant FM strategies. Additionally, policy interventions should consider aligning FM frameworks with staff competencies to ensure that facilities are managed in a manner that enhances sustainability and long-term user satisfaction.

5 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary and Conclusions

This study examined the relationship between institutional differences, educational background, and perspectives on FM within tertiary institutions in Oyo State, Nigeria. Two major conclusions were drawn:

There is a statistically significant association between the institution a student attends and their level of satisfaction with facility management. Public institutions, especially the University of Ibadan, showed lower satisfaction levels compared to polytechnics and private institutions.

Educational qualification significantly influences FM strategy preference. While most respondents favored in-house management, respondents with specific degrees preferred hybrid strategies, suggesting that educational training shapes strategic perspectives in facility management.

5.2 Recommendations

Based on the findings of this study, several practical recommendations are proposed to enhance facility management practices and satisfaction levels across tertiary institutions in Oyo State, Nigeria. Firstly, public universities, particularly the University of Ibadan, should prioritize comprehensive reform of their facility management systems. This involves not only investing in physical infrastructure but also adopting management practices that are user-centered, responsive, and efficient. The persistent dissatisfaction expressed by students in public institutions indicates a need for performance monitoring, accountability mechanisms, and better allocation of resources.

Furthermore, there is a pressing need for the development of standardized facility management frameworks across all tertiary institutions in the state. Such a framework should be policy-driven and guided by international best practices, such as those outlined by the International Facility Management Association (IFMA). Standardization will help ensure equity in service delivery, enhance the quality of facilities, and promote continuous improvement in FM operations regardless of the institution's type or ownership.

Capacity building also emerged as a critical area of intervention. It is recommended that tertiary institutions invest in regular training and professional development for their facility management personnel. This will help bridge the knowledge gap, particularly in public institutions where in-house FM strategies dominate. Exposure to contemporary FM practices will empower staff to adopt more strategic and effective management approaches.

Moreover, institutions should consider the adoption of hybrid facility management strategies that combine the advantages of in-house teams with the efficiency and specialization of outsourced services. Such an integrated model can optimize operational performance while balancing cost, flexibility, and service quality. This approach is especially relevant for institutions with limited resources but a high demand for functional and well-maintained facilities.

Additionally, stakeholder engagement should be institutionalized as a core component of FM planning and implementation. By involving students and staff in decision-making and feedback processes, institutions can better align FM services with actual user needs and expectations. Regular satisfaction surveys, focus group discussions, and participatory planning sessions can serve as useful tools in this regard.

Finally, it is recommended that future research explores other dimensions of facility management in Nigerian tertiary institutions. Such studies could investigate the impact of FM on academic performance, student retention, and staff productivity, while also examining the role of funding, policy governance, and infrastructure lifecycle management. These insights will further enrich the understanding of FM's role in educational outcomes and institutional sustainability.

6 REFERENCES

[1] Abegunde, A., & Fayomi, I. (2025). Factors Shaping Facility Management Performance in Tertiary Institutions of Oyo State, Nigeria. *(Unpublished Reports).*

[2] Adegoriola, M. I. (2023). An integrated framework for heritage building maintenance management: The facility management perspective. *Journal of Engineering Review, 6*(3), 34-41.

[3] Adenuga, O. A., Odusami, K. T., & Faremi, J. O. (2007). Assessment of factors affecting maintenance management of public hospital buildings in Lagos State, Nigeria. 23-26.

[4] Adewunmi, Y., Ajayi, C., & Ogunba, O. (2009). Facilities management: factors influencing the role of Nigerian estate surveyors. *Journal of facilities management*, *7*(3), 246-258.

[5] Amaratunga, D., & Baldry, D. (2000). Assessment of facilities management performance in higher education properties. *Facilities*, *18*(7/8), 293-301.
[6] Ayoko, V. O., Peter, T., & Jegede, D. O. (2023). Inadequacy of infrastructural facilities in public universities in Nigeria: Causes, effects and solutions. *International Journal on Integrated Education*, *6*(3), 36.
[7] Bryson, J. M. (2018). Strategic planning for public and nonprofit organizations: A guide to strengthening and sustaining organizational achievement. *John Wiley & Sons.*
[8] Che-Ghani, N. Z., Myeda, N. E., & Ali, A. S. (2023). Efficient operation and maintenance (O&M) framework in managing stratified residential properties. *Journal of Facilities Management*, *21*(4), 609-634.
[9] Chen, Q. (2014). Business continuity management framework for hospitals based on system dynamics analysis.
[10] Danjuma, S., Salihu, M. M., & Hassan, M. (2023). Student satisfaction with facility provision and quality in Nuhu Bamalli Polytechnic Zaria, Kaduna State, Nigeria. *Western European Journal of Linguistics and Education*, *1*(1), 9-20.
[11] Ebekozien, A., Aigbavboa, C. O., Samsurijan, M. S., & Rohayati, M. I. (2024). Improving Facility Management Performance in Public Higher Education Institution Buildings in Nigeria. In *Facility Management Practices:* Empirical Cases in Developing Countries. *Cham: Springer Nature Switzerland,* 61-70.
[12] Felker, G. B. (2003). Southeast Asian industrialization and the changing global production system. *Third World Quarterly*, *24*(2), 255-282.
[13] Galamba, K. R., & Nielsen, S. B. (2016). Towards sustainable public FM: collective building of capabilities. *Facilities*, *34*(3/4), 177-195.
[14] Gingue, N. B. (2022). The Effects of the Implementation of the Use of Data Analytics on Performance in the Field of Facilities Management: A Systematic Review *(Doctoral dissertation, University of Maryland University College).*
[15] Shakantu, W. (2024). Facilities Management its Effect on Social Sustainability: The Context of South African Higher Education Institution. *SEEDS*.
[16] Iftikhar, A., Al-Hammad, A. M., Alshibani, A., Ibrahim, A. M., & Abdallah, A. (2021). POE of public higher education facilities in Saudi Arabia: lessons learned from three case studies. *Property Management*, *39*(2), 250-276.
[17] Hauashdh, A., Jailani, J., Rahman, I. A., & Al-Fadhali, N. (2022). Strategic approaches towards achieving sustainable and effective building maintenance practices in maintenance-managed buildings: A combination of expert interviews and a literature review. *Journal of Building Engineering*, *45*, 103-490.
[18] Hebert, P., & Chaney, S. (2011). Enhancing facilities management through generational awareness. *Journal of facilities management*, *9*(2), 145-152.
[19] Ikediashi, D., & Aigbavboa, C. (2019). Outsourcing as a strategy for facilities management provision in Nigerian universities. *International Journal of Construction Management*, *19*(4), 281-290.
[20]Okwuashi, O. (2015). Significant factors influencing outsourcing decision for facilities management (FM) services: A study on Nigeria's public hospitals. *Property management*, *33*(1), 59-82.
[21] Ikediashi, D., Udo, G., & Ofoegbu, M. (2020). Post-occupancy evaluation of University of Uyo buildings. *Journal of Engineering, Design and Technology*, *18*(6), 1711-1730.
[22]Jain Palvia, S. C. (2017). Global Sourcing of Services: Why, What, Where, and How?. In *GLOBAL SOURCING OF SERVICES: Strategies, Issues and Challenges* (pp. 3-47).

[23]Lavy, S. (2008). Facility management practices in higher education buildings: A case study. *Journal of Facilities Management*, *6*(4), 303-315.
[24] Leal-Filho, W., Dinis, M. A. P., Sivapalan, S., Begum, H., Ng, T. F., Al-Amin, A. Q., & Neiva, S. (2022). Sustainability practices at higher education institutions in Asia. *International Journal of Sustainability in Higher Education*, *23*(6), 1250-1276.
[25]Lind, H., & Muyingo, H. (2012). Building maintenance strategies: planning under uncertainty. *Property Management*, *30*(1), 14-28.
[26] Mahmoud, A. S., Hassanain, M. A., & Alshibani, A. (2024). Evolving Trends and Innovations in Facilities Management Within Higher Education Institutions. *Buildings*, *14*(12), 3759.
[27] Ndlovu, P. M. (2021). *Examining issues influencing effective facilities management practice on selected public sector buildings in South Africa* (Doctoral dissertation).
[28] Odediran, S. J., Opatunji, O. A., & Eghenure, F. O. (2012). Maintenance of residential buildings: users' practices in Nigeria. *Journal of Emerging Trends in Economics and Management Sciences*, *3*(3), 261-265.
[29] Ogunbayo, B. F., Aigbavboa, C. O., Thwala, W., Akinradewo, O., Ikuabe, M., & Adekunle, S. A. (2022). Review of culture in maintenance management of public buildings in developing countries. *Buildings*, *12*(5), 677.
[30] Ekemode, B. G. (2018). Awareness and utilization of building information modelling (BIM) for facility management (FM) in a developing economy: Experience from Lagos, Nigeria. *Journal of Facilities Management*, *16*(4), 387-395.
[31] Opoku, A., & Lee, J. Y. (2022). The future of facilities management: Managing facilities for sustainable development. Sustainability, 14(3), 1705.
[32] Patil, A., Soni, G., Prakash, A., & Karwasra, K. (2022). Maintenance strategy selection: a comprehensive review of current paradigms and solution approaches. *International Journal of Quality & Reliability Management*, *39*(3), 675-703.
[33] Taib, N., & Massoomeh, H. M. (2022). Informal academic learning space preferences of tertiary education learners. *Journal of Facilities Management*, *20*(5), 679-695.
[34] Rudden, M. S. (2010). Five recession-driven strategies for planning and managing campus facilities: facing significant fiscal challenges, colleges and universities are pursuing creative and innovative facilities planning and management strategies. *Planning for Higher Education*, *39*(1), 5-18.
[35] Shah-Ali, A. (2009). Cost decision making in building maintenance practice in Malaysia. *Journal of Facilities Management*, *7*(4), 298-306.
[36] Talamo, C., & Bonanomi, M. (2015). *Knowledge management and information tools for building maintenance and facility management* (Vol. 3). Berlin/Heidelberg, Germany: Springer International Publishing.
[37] Temeljotov Salaj, A., & Lindkvist, C. M. (2021). Urban facility management. *Facilities*, *39*(7/8), 525-537.
[38] Van-Sprang, H., & Drion, B. (2020). *Introduction to facility management*. *Routledge, 45*(4), 67-82.
[39] Yu, C. J., & Kang, J. (2009). Environmental impact of acoustic materials in residential buildings. *Building and environment*, *44*(10), 2166-2175.
[40] Zendehdel Nobari, B., Gholipour, A., Ebrahimi, E., & Shoja, A. (2021). Employee performance appraisal system development in the National Library and Archives of Iran (NLAI): Soft operational research approach. *Performance Measurement and Metrics*, *22*(2), 117-136.

To connect with the authors (corresponding author), send a request to the editorial board using:
https://www.internationalpublishersijmrasfp.com/contact-us

Connect with Us on

The International Journal of Multidisciplinary Research in Academic Studies and Field Practices (IJMRASFP) is an advocate of the Sustainable Development Goals (SDGs) of the United Nations (UN).

We are Green; Are you Sustainable?

(Protect the environment; only print when it is necessary)

You may want to read about the Sustainable Development Goals (SDGs)

Click Here