OPEN ACCESS JOURNALS

Indiana Journal of Humanities and Social Sciences

Abbriviate Tittle- Ind J Human Sco Sci

ISSN *(Online)*- 2582-8630

Journal Homepage Link- https://indianapublications.com/Journals/IJHSS

INDIANA PUBLICATIONS
PRODUCTIVE AND QUALITY RESEARCH

Research Article

Volume-02|Issue-07|2021

The Impact of Facility Management on Office Buildings Performance in Nigerian Universities

Okoro Anthony Chinemenma*[1], Nwosu Chiemezie Chisom[1], Otty Emmanuela Uzoamaka[1]

[1]Department of Estate Management, Nnamdi Azikiwe University, Awka Anambra State, Nigeria

Article History
Received: 25.072021
Accepted: 15.07.2021
Published: 25.07.2021

Citation
Chinemenma, O. A., Chisom, N. C., & Uzoamaka, O. E. (2021). The Impact of Facility Management on Office Buildings Performance in Nigerian Universities. *Indiana Journal of Humanities and Social Sciences*, *2*(7), 19-28.

Abstract: The research focused on determining the impact of facility management on office building performance in Nigerian Universities. The research also examines the effectiveness of facilities management. Ninety-five (95) questionnaires were distributed in which eighty-one (81) were retrieved. Data collected were analyzed using Relative Importance Index (RII).The ranking is based on the relative importance of the factors as perceived by both the facility managers and users of the buildings/facilities. From the analysis, provision of a safe environment, satisfactory physical working condition, provision of relevant and high quality equipment and use of quality materials in providing services etc. ranked first, second, third and fourth respectively. The study revealed that facility management has a direct positive impact on performance of office buildings in Nigerian universities. The study recommends that universities should establish a facility management department to coordinate uses and services of facilities in office buildings.

Keywords: Universities, Relative Importance Index (RII), Office Building, Safe Environment, Management.

INTRODUCTION

The university education in Nigeria is facing revolutionary pressure driven by exciting new programmes and research initiatives. While these programmes and operations are keenly positioned for the 21st century, the facilities and campus infrastructure to support them are perceivably inadequate and poorly managed. Ajator (2012)

Facility Management represents a tool for continuous and sustainable improvements and allows for the efficient operation and maintenance of the buildings. Until very recently, Facility Management (FM) was not common in Nigeria. Designers used to design all types of buildings without consideration for the FM requirements. Unfortunately, this has led to various problems especially for office buildings, which require special FM considerations during the different phases of the Facility starting from the Conceptual Planning and Design phases until the Operation and maintenance phase. Most probably, buildings were only maintained, serviced and cleaned without any consideration, during the pre-operation phase of the facility, for the FM requirements. Several designers did not take into account the adequate operations, smooth maintenance and repair, or even buildings' occupants' satisfaction during the use of the facility.

The role of a facilities management can vary depending on the facility and the business. However, there are typical building processes that managers are expected to be responsible for. These range from strategic planning and management of day-to-day operations, to security and building maintenance. As well as ensuring the health and safety of occupants.

Typically, facility professionals are expected to lead the management of various services such as:

- Scheduling and planning regular maintenance and building repairs
- Handling legal or contractual matters (with occupants and third-party suppliers)
- Providing occupants with the right equipment and amenities
- Being compliant with health and safety regulations
- Making sure occupants are happy and safe through space management
- Ensuring the premises is kept secure

One major role of a facilities management is to ensure occupants are happy and getting the most from their built environment after all, the main objective is to keep a facility in the best working order possible in order to generate revenue. This can be achieved through effective_workspace_management such as the design of office layouts, ensuring shared spaces are clean, and providing the right furniture or equipment.

Workspace management is so essential that in a 2019 workplace survey, 73% of responders said well-

***Corresponding Author:** Okoro Anthony Chinemenma

managed office spaces were the driving force that helped them perform better at work.

As head of a building's entire operations, a facility manager will work across a range of disciplines. These can be broken down into two categories; hard and soft services. Knowing the_difference_between_hard_and soft_facilities_management_tasks, and which processes fall into which category, is essential to help identify the roles expected of a facilities manager.

REVIEW OF RELATED LITERATURE

Facilities Management, this can be defined as the process through which the premises and services required to support core business activities are identified, specified, procured and delivered. FM involves significant strategic facilities planning and implements company policies on property issues. Facilities management focuses on the building occupier and adds value to the client organization by improving processes through which workplaces can be managed to inspire people to give their best. While in Building Performance, the performance of a building as a physical asset is the technical performance of its physical components and the quality of the facilities provided by it. Building performance should be perceived from the level of functionality of the structure, the facilities within it as well as the extent to which it supports activities taking place within it. A building's performance is usually evaluated by rating the performance of its attributes.

Effectiveness of Facilities Management

This is the extent to which FM service in an office building is able to make the facilities of an organization support the objectives and strategic aims of an organization. It is a measure of how strategic and proactive the FM is. It is also how adequate it is at identifying the needs of the users and its ability to put in place proper provisions to satisfy such needs and hence enhance their productivity. Effective facilities management provides a safe, comfortable and productive working environment. Understanding the role of buildings and how they can be deployed in the context of the operation of each individual business is the essence of FM (Kwok & Warren, 2005). A client perspective of FM effectiveness is usually from two angles i.e. technical and functional performance. Technical performance indicates how well the problems are solved and the techniques and equipment used. Functional performance is concerned with how the service is provided i.e. how courteous and responsive the FM staffs are (Barrett, 1995). In organizations the choice of performance measure for use should depend on which of these two quality factors is more important to it. However, a good performance measure will normally combine both aspects though with different emphasis. Simpson and Barrett (1996) advised that the customer' evaluations of service quality could be measured against service level agreements (SLA) but advised that SLA could be a valid scale only where a fair representation of the consumers have been used in developing the service agreement.

Varcoe (1996) opined that the important dimensions of building performance are three i.e. customer satisfaction, functionality and productivity. He discouraged the use of financial measures which he claimed originated to satisfy such external financial reporting as auditing. He discountenanced the idea of using different weighting for the dimensions according to organizational objectives as applicable with the Balanced Score Card (BSC) framework by Kaplan & Norton (1996).

Building Performance

The performance of a building as a physical asset is the technical performance of its physical components and the quality of the facilities provided by it. Building performance should be perceived from the level of functionality of the structure, the facilities within it as well as the extent to which it supports activities taking place within it. A building's performance is usually evaluated by rating the performance of its attributes. McDougal et al. (2002) gave a consensus definition for building performance as the level of efficiency and effectiveness of the building or the quality of the facilities provided by it. They further stated that a building is considered an enabler i.e. the building may not in itself add value to the process but it facilitates the process and has the potential to cause process problems if not properly maintained. From the above definitions, building performance can be defined as the ability of a building to promote the achievement of the user's earmarked objectives effectively and efficiently using minimum resources. It can also be concluded that functional offices act as enablers in the achievement of the strategic and operational objectives of a company. These perspectives of building performance are further supported by authors such as Grimshaw & Keefe (1992); Oseland & Bartlet (1999) in their research, which established strong relationships between a good working environment and improved work performance. Performance measurements for office buildings and FM provisions have therefore become quite important in view of the need to further demonstrate the added value of FM to organizations. Building performance can be perceived from two main areas which are technical and functional quality (Brackartz & Kenley, 2002). Technical quality is concerned with the methods adopted in solving problems how efficiently they are solved. Functional quality revolves around the effort and way that the service was rendered e.g. attitude of

***Corresponding Author:** Okoro Anthony Chinemenma

FM staff to clients and their physical appearance (Barrett, 1995). Traditionally, corporate real estate managers measure performance on the basis of operational cost efficiency, using such indicators as maintenance cost, cost per square meter, etc. (Duckworth, 1993; Bdeir, 2003).

Strategic FM Service Provider

When FM is in its infancy, it grapples with janitorial and operational issues. With increasing maturity it evolves through the tactical into the strategic stage where it implements organizational objectives on property issues. A facilities manager who utilizes Strategic FM Principles provides the intelligent client function, which starts with intelligence gathering on user's needs and the organization's mission, from where it moves on to the stage where policies are created and finally to the procurement and delivery stage – the supply chain. He provides the essential link between the sponsors of facilities operation and service providing contractors.

Strategic Facilities Management

This is the application of strategic FM principles in the management of facilities. It commences with immense strategic facilities planning and use of value management approaches in the development of a value managed facilities policy that has direct reference to the corporate mission and needs of the users of the facilities. Examples of such value management approaches include strategic procurement of services and materials and application of performance monitoring and control strategies, such as incentive and punitive payment schemes. In strategic FM, the activities of the BSS providers are guided by the facilities policy which would expectedly specify the mission, strategies and tactics of the operations. It would also indicate the required tasks and their performance levels and standards.

Non-strategic Facilities Management

This type of FM does not adopt value management approaches in its operations. The activities tend to be largely operational, rather than strategic in nature. The operations are not guided by strategic facilities policies and tend to be reactive rather than proactive.

The operational and strategic levels of FM

Barrett & Owen (1992) divide FM into two broad categories by function analysis:

- Operational or implementation functions
- Management function

Operational or Implementation functions

Operational activities are day-to-day or routine support functions involving workers. Activities include the operation and upkeep of overall physical resources in order to maintain the good condition and appearance of the workplace, to add value to physical resources, and to provide a safe and healthy environment for the organization's primary activities. Tasks at this level have a relatively short-term scope, and involve specific processes, simple and direct, such as cleaning, replacing, repairing, redecorating, grounds-keeping etc. Secure arrangements for such routine operations and services are the bedrock of good FM practice (Nutt, 2000).

Management functions

Management functions can be distinguished at tactical and strategic levels.

Tactics are action plans involving routine, specific and short-term preventive or managerial operations. (Johnson & Scholes, 2002) Such activities, which are best kept simple, focus, for example, on routine actions such as safety procedures for prevention or proper use and care of maintenance resources. Activities on this level support responsible behavior in the workplace and the continuity of working conditions.

Astri (2017) did a study on Understanding Facilities Management Practices to Improve Building Performance: The opportunity and challenge of the facilities management industry over the world. It offers important contributions to address the challenge of inefficiency in terms of building operation and maintenance thus making the facilities management industry become one of the fastest growing industries in the world. Facilities management integrates the entire component of the built environment including people, process, place and technology to make sure that the built environment system works optimally. It was found that there is a stark contrast in the development of facilities management practices in the western countries as compared to that in the eastern countries. The industry of facilities management is relatively new and the research related to that field is still limited thus providing a huge opportunity to develop it in the future since the importance of this field is increasingly recognized.

Finch & Zhang (2013) explores the discipline of facilities management and the contribution that this emerging profession makes to securing sustainable building performance. In their work it argues that the realization of intended environmental improvements depends pivotally on the behavior of users and the ongoing management of the facility throughout its life. It also describes an alternative view of a building's evolution as seen through the eyes of the facilities manager. It recommended the role of facilities management in ensuring continued performance improvements with respect to sustainable objectives; explore buildings as a multilayered process rather than a product; explain how facilities managers consider sustainability interventions at critical points within this

***Corresponding Author:** Okoro Anthony Chinemenma

layered life cycle; examine how whole life building economics impinges on sustainable decision making.

Fadahunsi *et al.* (2019) in their paper Benefits of the Adoption of Facilities Management Practices in Tertiary Institutions: A Case Study of Covenant University, noted that proactive maintenance, improved health and safety, good and neat environment, quality services and functional buildings are the key factors in determination of Facilities Management Practices in Tertiary Institutions. The study also identified facility management tools used in Covenant University as asset tracking and register, estate operational plan, costs benefit analysis, energy use auditing and control and performance analysis. The study went further to recommend additional facilities management tools that should be appropriately deployed in the University.

Waly & Helal (2010) their paper aims to identify the role and adequacy of Facility Management of the office buildings in Egypt. They conducted a survey on the number of office buildings to monitor and depict the opinion of its occupants on the building design and services. The analysis of this survey illustrated the pros and cons of the buildings functions and performance. Finally, their paper demonstrates the impact of Facility management and its significant role in improving the office building performance

Bortolini & Forcada (2018) did a study on Facility managers' perceptions on building performance assessment, during the operational phase, it was gathered that building performance may decrease in various areas, so that the end users' requirements are no longer met. Consequently, indicators are useful to assess and improve the performance of existing buildings. The results revealed that the core indicators used to measure a building's operational performance are related to safety and assets working properly, health and comfort, space functionality, and energy performance. The findings also revealed that these indicators can be obtained from three sources: facility managers/operators, who carry out corrective maintenance and perform technical inspections, also regular users, who report complaints and fill-in satisfaction questionnaires, and sporadic users, who also fill-in satisfaction questionnaires. These indicators and their sources can contribute to a better analysis of building performance and the definition of measures to improve performance during the operational phase of a building.

Purpose Built Office Buildings

An office building is a built structure that serves as a work place and accommodates the administrative, information and knowledge processing activities of an organization such as supervising, directing, decision making, communication, filling etc. For the purpose of this research, "office buildings refer to the physical structure which provides the workplace enclosure as well as the public areas, mechanical systems, fixtures and fittings, equipment, furniture as well as other building and staff support provisions. Purpose built offices are conceived, planned, designed and developed as an office building and is utilized strictly for office related purposes. A building designed or built for some other purposes other than office such as residential, manufacturing or trading, but later converted to office is not purpose built.

The studies above have tried to identify the impact of facility management in office building performance in their peculiar ways while some highlighted the Benefits of the Adoption of Facilities Management Practices in Tertiary Institutions, but none was about the impact of facility management in office building performance in Nigeria universities which this work is devoted to.

The Rationale for Office Buildings Performance Measurements

This topic examines the numerous benefits that are derivable from measuring the performance of buildings and their management by the building industry, according to literature. In other words, it examines both the benefits of building performance measurement and measurement of performance of facility managers. In today's terms the fate of organizations is increasingly governed by volatility in business practices, user requirements and lifestyle (Leeman & Bordass, 2001). Performance evaluation helps managers of buildings to cope better with these volatilities so that businesses and national economies are better sustained. It has been found that good outcomes from properties sometimes emanates from minimizing the downsides rather than optimizing its potential benefits (Bordas *et al.*, 2001). Performance measurement helps to indicate these downsides and simple ways of achieving things with minimal efforts. The presence of symptoms of underperformance in a building is sometimes an indication that its management is overburdened by the support requirements of the building. These requirements can overburden management where there is poor communication between the parties and where there are false expectations on the part of the occupier. Overburden could also result where designer's fail to convey adequate information on the level of support that a building will need (Bordas *et al.*, 2001). Performance measurement therefore helps to identify the presence of a burdensome building support system in order to forestall its continuous existence and repetition in future. Environmental sustainability legislations are becoming extensive and the implications of not abiding by them are becoming increasingly severe. Performance measurement helps building and its service providers to identify these legislative requirements and to adequately meet them (Leaman & Bordass, 2001). Performance measurement helps

***Corresponding Author:** Okoro Anthony Chinemenma

provide information on the current level of performance in a building, how well a building has met its objectives and suggests possible rooms for improvement. This is captioned succinctly in the statement made by Teicholz's (2003) that you cannot improve what you cannot measure. Performance evaluation indicates the need for resource re-allocation, thereby improving efficiency in its allocation. These help to improve the performance of both proposed and existing buildings and invariably that of the occupants. As a consequence, the cost-benefit ratio of both buildings and the human resources that occupy them are enhanced. Performance measurement also helps to enshrine accountability on the use of the funds and resources of organizations. Performance evaluation helps to identify customer needs and increase the level of their satisfaction thereby making buildings more customer friendly. It helps to bridge the gap that persists between the expectations of building users and the quality of services provided by practitioners towards the fulfillment of these expectations (Augenbroe & Park, 2005). Buildings and facilities sometimes undergo drastic changes which could require a redefinition of their internal client processes in response to refurbishments, internal reorganizations, and or change of building occupants (Augenbroe & Park, 2005). In instances like these, performance measurement helps to ensure that the building continues to meet users' needs. Performance measurement demonstrates the value of FM to businesses, thereby enabling the practitioners attain strategic roles in organizations (Nelson, 2006). It provides the essential information that is required in the monitoring and control of the building delivery process thereby improving the performance of the industry and its product. The thinking of the construction industry professionals are fragmented as a result of the significant fragmentation among them (Alexander, 2008). User's perceptions on the other hand are not; because building performance evaluation adopts user perception it creates solutions to problems in the work environment from the perspectives of the user rather than as dictated by the fragmented structure and thinking of professionals within the industry. This helps to streamline and improve the focus of these solutions to the problems of the work environment.

Assessment of Performance

The added value of FM to organization comprises both the tangible and the intangibles (Nelson, 2005). The bane of the majority of the existing performance measurement tools is the inability to adequately quantify the values of the intangible benefits or components, which ordinarily do not have numerical values. An appropriate measurement tool for FM efficiency and building performance must therefore be capable of demonstrating how FM provides comfort and satisfaction to users; It must measure from the financial, building condition, service and customer perspectives. Performance measurements incorporating non-financial measures have been found to be capable of overcoming the limitations of the financial measures. For this reason they have become topic of great interest particularly in the 1990's. However, this has not always been the case and at one time traditional measures of FM performance which focused on costs were quite popular (Nelson, 2006). Financial performance measures, concentrate on the contribution of FM from the angle of operational efficiency and cost. It perceives property as a cost that needs to be controlled, instead of an asset that creates added value to the business. As a consequence, FM performance is measured using units such as cost of space occupied per head, total cost of facilities per square meter, maintenance cost per square meter etc. Another important characteristic of the traditional performance measurement system is that it failed to provide managers with the information that they needed to measure and manage the all-important FM competencies that drive competitive advantage (Amaratunga *et al.*, 2000).

Review of Empirical Studies on Facilities Management and Building Performance

This section reviews literatures that are relevant to facilities management, performance measurement, building performance and performance indicators. It examines the concept adopted in these previous studies, the methodologies and the substantive findings with a view to identifying gaps in knowledge which this current research could fill. Not many of these reviews were on studies based in Nigeria. In fact a significant number of them were studies done within Europe and USA. This is because of the relative infancy of FM in Nigeria (Adewunmi *et al.*, 2008). Nonetheless a few Nigerian based studies that were found relevant were appropriately incorporated into the review.

Obitayo (1995) worked on building performance in Nigeria. She used POE to evaluate performance of buildings within Lagos State Housing Scheme. As typical of POE studies the research adopted a case study (Cohen *et al.*, 2001) that is Dolphin Housing Scheme Phase One (1). The use of case study in her research limits the relevance of the study to performance measurements of average buildings in Nigeria. In addition the study adopted the environment approach which though investigative in nature is a partial rather than total building performance appraisal approach. As a consequence, the emphasis of the research was on design and spatial considerations while neglecting aspects such as, technical, cost, externalities and support for users. The research also did attempt to identify relevant building performance criteria in Nigeria or to verify the applicability of the indexes that were adopted through an empirical investigation.

Liefer (1998) focuses on health performance of office buildings. The study attempted to improve the method used by the World Health Organization in a previous study, in the same study area in 1994. Due to the restricted focus only two group measures or

***Corresponding Author:** Okoro Anthony Chinemenma

perspectives were considered in the study i.e. satisfaction and comfort. Also in line with the specific area of study it incorporated Nuero-specific symptoms and allergic reaction measures, such as skin and throat irritation, lethargy, headaches etc. This makes the resulting measure quite contemporary and innovative as it enables health issues like building health and sick building syndrome to be considered. These are undoubtedly two major health issues in workplace physical health today. However some of the 25 indices that are included in the study are considered to be superficial and not necessarily related to health. In other words they are more of a comfort than health measures. For instance telephone privacy and work storage space. The restricted focus of the research also reduces its general application.

Odiete (1998) worked on the practical application of FM in Nigeria, particularly regarding its effect on building performance. The study adopted literature review and archival records as the source of its data. The author opined that FM has not found wide application in Nigeria and that its position as a discipline has not been well defined. He stated that the role of facilities manager depends on the organizational structure, effectiveness and efficiency of the management system, focus of management and what it intends to achieve with its broad management policies. Odiete (1998) listed factors that could militate against the effective application of FM as including poor conceptualization of ideas, operational problems as a result of poor harmonizing of ideas of facilities manager with that of the organization, poor funding, inability to assemble right professionals, frequent change in management and inadequate training of facilities managers.

Using three properties i.e. Mobil House, Chevron Complex both in Lekki and Adamasingba stadium Ibadan as case studies (the first two from the private sector - oil industry and the third from the public sector), Odiete (1998) demonstrated that effective application of FM in Nigeria results in better performing facilities and buildings. The study provided some background information on FM in Nigeria, although it would have provided more useful information had it been empirical in nature. This study intends to bridge this gap through an empirical survey on FM effectiveness.

Akintayo (1999) attempted to examine the effect of FM on company profitability. Studies have linked efficient FM with worker's performance and invariably improved profitability. The study is to empirically demonstrate the possible relevance and usefulness of FM in enhancing profitability of average Nigerian companies that adopt it. The study had three (3) major hypotheses. The first tries to establish if facilities investment constitutes 50% of average company total asset investment. This was confirmed in the research but the weakness of this research is that it concluded that once this hypothesis is confirmed, it means that profit levels are influenced remarkably by FM without carrying out any further analysis to establish the required relationship.

The second Hypothesis tried to establish a relationship between effective FM and profit level, but was also deficient in taking the profitability ratio as the indicator of effective FM as. Profitability ratio is the value of net profit divided by the value of fixed assets. Secondly, it assumed that the style of managing property in each company is facilities management and that there is no distinction between it and other property management styles. In other words the research erroneously assumed that property care givers in all of the surveyed companies practice FM and that once you take care of facilities you are a facilities manager. Hypothesis three (3) attempted to establish critical factors for effective FM using student T tests. The study found that type, complexity and uniqueness of the facilities employed by the company are the most critical factors. However, most of the factors considered by Akintayo (1999) in this third hypothesis investigate the effect of nature of facility rather than nature and effectiveness of the support service provided, on the facility. This is a gap that the current research hopes to fill.

Ho *et al.* (2000) reviewed current benchmarking practice of FM in Pacific Asia region. The research attempted to develop a custom made performance measure based on the importance rating and rating of the frequency of use of the individual metrics that were considered in the research. 97 indices which were extracted from literature were used. These were grouped under eight (8) major performance metrics. The metrics were separated into two categories: performance measures and performance indicators. The researchers explained that the main difference between the two is that performance indicators are direct representation of the scale for individual organizations e.g. floor area and total occupancy, while measures are values that are comparable within organizations e.g. occupancy cost per employee and number of employee respectively or in another example occupancy cost per square meter and total floor space. The need for this distinction and for obtaining these two sets of data are not clear and actually appear like duplication as the values of one can be easily derived from the other. For example if floor area and total cost of occupancy is known occupancy per square meter can be obtained. This duplication actually appears confusing.

Another weakness of Ho *et al.* (2000) research is that much emphasis was placed on quantitative and financial measures as quite a number of the individual indicators were found to be related to either cost or consumption. This was at the expense of more qualitative measures of comfort and satisfaction as in

***Corresponding Author:** Okoro Anthony Chinemenma

the works of Kaplan & Norton (1996); Liefer (1998); Brakertz & Kenley (2002). It is also not so clear why measures like competence of in-house staff and adequacy of budget will constitute factors for building performance measures; they appear to be more like measures of effectiveness of BSS providers. Lastly, in the analysis, there was only descriptive statistics done. To this effect the researchers mainly described the rankings from the mean item score for the various indices. The expectation is that some inferential statistics will be used to make some more concrete findings. For example, narrowing these 97 matrices to a number that will comprise only the significant matrices and attempting to build a model from these factors. Also, the performance measure is contextual to the Asia pacific socio-economic environment. This current research attempts to bridge these gaps by developing a custom made building performance tool for Nigeria that will be devoid of the weakness identified above.

Shaw & Haynes (2002) attempted to develop a performance measurement framework that is beyond simple cost metrics. The study attempted to identify an appropriate service dimension that will offer the facilities manager a structured measure that will help improve service quality. It used a self-administered questionnaire. Group sessions were however used to generate the initial line of questions for the questionnaire. 26 items were identified and respondents were asked to score them based on the level of importance they place on each item on a seven point scale. 201 questionnaires were analyzed. Factor analysis was used to analyze the data and Keiser's criterion was used to extract factors with Eigen value of more than 1. A scree plot was used to verify the result. A total of six important factors were obtained from the twenty six. Kruskal Wallis test was used to examine if there are any significant differences in the ratings of the variables by the different various business groups. None was found - implying that all the dimensions should be managed by facilities managers equally. The research tried to overcome the weaknesses of previous research through the use of extensive pilot studies. Its limitation is the scope and its restriction to the project management aspect of FM alone.

Bracketz & Kenley (2002) attempted to develop performance evaluation techniques for Local government council facilities i.e. for instances where the strategic aim of the organization are not profitability but service provision. This restricts the general application of this research. The study was to enable facilities to demonstrate their probable usefulness to the community that they serve, thereby encouraging management to make strategic decisions about the future of these facilities. The research reported a pilot study that was conducted by consulting stakeholders within a local government area in Melbourne, Australia. The study showed that financial measures, although capable of showing how facilities are doing financially, are incapable of indicating the facility's contribution to the organization's strategic goal. He therefore developed what he termed service balance score card which had its foundation in the work of Kaplan & Norton (1996).

The service balance score card examined four perspectives which are services, financial, community/customer and building perspectives, while the four perspectives in Kaplan and Norton (1992) are business process, customer/user, finance and learning/growth perspectives. Apart from this difference in perspectives, a balanced score card uses management opinion in most of its ratings while this work adopts the perception of stakeholders. A weighted score that reflects the importance of each perspective to organizational objectives is then adopted. This score enables a comparison of the performance of the facility with similar facilities within the organization local government, i.e. internal benchmarking or comparison with those in other local government councils, external benchmarking.

The attributes of a performing facility that were revealed include delivering a wide range of services, having high number of users, use by a wide range of community sectors, good community support, providing services suited to the community, opening as long as possible and financial viability. Although quite elaborate as far as non-profit oriented facilities are concerned, the study was rather limited in application, particularly for a work environment where the strategic objective is profitability. In addition the restriction of the investigation to only one local government council also restricts its general application as culture; environment and situation have been found to largely affect the facilities manager's role (Chotipanich, 2004). Furthermore, the idea of asking stakeholders to score perspectives according to their effect on organizational objectives might be difficult to achieve in Nigeria considering our attitude to research. All of these features create a gap which this current study intends to fill.

Adenuga (2008) worked on building performance measurement. The study found amongst others the following as major factors affecting effective maintenance management practices within the study area; Inadequate/inappropriate maintenance of facility plant and equipment for maintenance operations, lack of execution of planned maintenance programme, attitude of users and misuse of facilities, no adoptions of appropriate maintenance cycle for building maintenance and no long term arrangements being made for the supply of essential parts for replacements. These factors indicate that his research examined building performance as it relates to maintenance management and not overall BSS service. Moreover, his focus was on health buildings (Hospitals, both public and private).

***Corresponding Author:** Okoro Anthony Chinemenma

Durodola (2008) worked on application of Facilities Management on hotel premises. The author examined the impact of management style on level of performance. Four classifications were adopted; maintenance management, property management, facilities management and facilities benchmarking. It is unclear why this author regarded facilities benchmarking as a management style, as it is actually a FM performance measurement method. Also, what he referred to as management styles are building support practices. One of the major findings in this study is that hotels that used FM are more effective compared to those that used other "styles". In greater detail only one third of hotels which used maintenance management were adjudged effective while 67% and 87% were adjudged effective among those who adopt FM and FM benchmarking respectively.

Some of the benefits of FM according to him are improved functionality, improved patronage, strategic planning and implementation and proactive maintenance. This study also examined the major challenges to the holistic application of FM principle in hotel management. The most significant challenge was found to be concern for immediate return on investment followed by religious sentimentalism. Poor infrastructure and poor business promotion and marketing of hotel organizations were ranked 3rd and 4th most significant challenges respectively. Again, it is not clear why the above factors constitute "challenges to holistic application of FM" as they seem to be more of "challenges to profitable operation of hotel business" It appears that the author has confused these two problem areas. Through this study on evaluation of FM practice in hotels, Durodola (2008) filled some gap in the study area. However, the identified limitations created the need for a new study that would attempt to address some of these limitations. This current study evaluates application of FM within a different building type i.e. office buildings. It also identifies the needs of users and develops a contextual tool for measurement of office buildings.

Base on the review of available literature, this study identified the impact of facility management in office building performance in Nigeria universities as follows:

The key performance in facility management in office building includes:

- Completion of project to staff satisfaction
- Provision of safe environment
- Effective utilization of space
- Effectiveness of communication
- Reliability
- Professional approach of the premises staff
- Competence of staff
- Management of maintenance
- Responsiveness of FM department
- Changes and requirements
- Value of money
- Satisfactory physical working condition
- Relevance of equipment provided
- Suitability of premises and work environment.
- Quality of end product
- Effectiveness of FM helpdesk service
- Achievement of completion deadlines
- Standard of cleaning
- Management Information

METHODOLOGY

The research was designed to determine the impact of facility management on office building performance in Nigerian Universities. Two Nigerian universities were selected for the study (Nnamdi Azikiwe University Awka, Anambra State and Chukwuemeka Odumegwu Ojukwu University Uli, Anambra State). The study employed survey approach; primary source was used as data were collected from Facility Managers, building occupiers/users in the universities. Building occupier / users here refers to members of staff of the university who occupy the building for productive activities. They include both the academic and non-academic staff of the university. 81 completed questionnaires were used for the analysis. Relative Importance Index (RII) was used to analyze the respondents' scores of the basic factors. With the use of Likert scale, respondent's opinion on the impact of facility management on office building performance in Nigerian Universities was obtained.

***Corresponding Author:** Okoro Anthony Chinemenma

Data Presentation and Analysis

Table 1. Ranking of Impact of Facilities Management on Office Building Performance

S/N	Impact	Scales and number of respondents					R II	Ranking
		5	4	3	2	1		
1	Provision of safe environment	50	23	6	2	-	4. 51	1
2	Satisfactory physical working condition	47	23	8	3	-	4.41	2
3	Provision of relevant and high quality equipment's	44	21	11	5	-	4.28	3
4	Use of quality materials in providing services	44	20	10	5	2	4.22	4
5	Effective utilization of space	41	24	8	6	2	4.20	5
6	High level of energy performance	37	25	9	7	3	4.06	6
7	Reliability of building support services	36	24	10	7	4	4.00	7
8	Competence of staff	32	26	11	9	3	3.93	8
9	Effectiveness of communication	29	25	12	10	5	3.56	9

Rank: (very Important -5, Important -4, moderately Important-3, of little Important -2, unimportant -1)

From the analysis, provision of safe environment ranked first, satisfactory physical working condition ranked second, provision of relevant and high quality equipment's ranked third and use of quality materials in providing services ranked fourth etc. and they are the most significant impact factors.

CONCLUSION AND RECOMMENDATION

The study determined the impact of facility management on office building performance in two Nigerian Universities. Facility management is required to provide a safe environment and satisfactory working conditions to users of office buildings. The study revealed that facility management has a direct positive impact on performance of office buildings in Nigerian universities. The study recommends that universities should establish a facility management department to coordinate uses and services of facilities in the office buildings. The study also recommends that facility managers should ensure the effectiveness of their services as well as the good performance of the office buildings they operate.

REFERENCES

1. Adenuga, O. A. (2008). *Evaluation of maintenance management practice in public hospital buildings in South West Nigeria* (Unpublished Doctoral dissertation). University of Lagos, Akoka Lagos, Nigeria.
2. Ajator, U. O. (2012). Total Cost Management of Infrastructural Projects. Ezu Books LTD, 126 Zik Avenue, Uwani- Enugu.
3. Akintayo, O. K. (1999). *Study on improving profits in Nigerian companies through effective facilities management* (Unpublished Doctoral dissertation). Obafemi Awolowo University, Ile-Ife, Nigeria.
4. Amaratunga, D., Baldry, D., & Sarshar, M. (2000). Assessment of facilities management performance–what next?. *Facilities, 18*(1/2), 66-75.
5. Barrett, P. (1995). *Facilities Management: Towards best practice*. Oxford: Blackwell Science.
6. Barrett, P. & Baldry, D. (2003). *Facilities Management: Towards best practice* (2nd Ed.). Oxford: Blackwell Science.
7. Bdeir, Z. (2003). *Strategic Performance in Corporate Real Estate*. Boston: MA. Harvard Business School Press.
8. Bordass, B., Leaman, A., & Ruyssevelt, P. (2001). Assessing building performance in use 5: Conclusions and implications. *Building Research and Information. 29*(2), 144–157
9. Brackertz, N., & Kenley, R. (2002). A service delivery approach to measuring facility performance in local government. *Facilities, 20*, (¾), 127-135.
10. Cohen, R., Standeven, M., Bordass, B., & Leaman, A. (2001). Assessing building performance in use 1: The probe process. *Journal of Building Research and Information, 29*(2), 85–102.
11. Duckworth, S. L. (1993). Realizing the strategic dimensions of corporate real property through improved planning and control systems. *Journal of Real Estate Research, 8*(4), 459-509.
12. Durodola, O. D. (2008). *Management of hotel properties in South-Western Nigeria: Facilities management perspectives* (Unpublished Doctoral dissertation), Covenant University, Ota-Ogun State, Nigeria.
13. Ho, D. C. W., Chan, E. H. W., Wong, N. Y., & Chan, M. (2000). Significant metrics for facilities management benchmarking in the Asia Pacific region. *Facilities, 18* (13/14), 545-555.
14. Kaplan, R. S., & Norton, D. P. (2005). The balanced scorecard: measures that drive performance. *Harvard business review, 83*(7), 172.

***Corresponding Author:** Okoro Anthony Chinemenma

15. Kaplan, R. S., & Norton, D. P. (1996). *The Balanced Scorecard: Translating Strategy into Action*. Boston: Harvard Business School Press
16. Kaplan, R. S., & Norton, D. P. (2001). Transforming the balanced scorecard from performance measurement to strategic management: Part 1. *Accounting horizons*, *15*(1), 87-104.
17. Kwok. A. W. L., & Warren C. M. J. (2005). *Optimisation of performance in facilities management*. Proceeding of Pacific Rim Real Estate Society Conference, 24th -27th Jan, Melbourne, Australia.
18. Leaman, A., & Bordass, W. (2001). Assessing building performance in use 4: the Probe occupant surveys and their implications. *Building Research and Information*, *29*(2), 129–143.
19. Leifer, D. (1998). Evaluating user satisfaction: Case studies in Australasia. *Facilities, 16* (5/6), 138- 140.
20. Nelson, M. (2006). FM performance measurement. *Premises and Facilities Management (pfm), FM Resources Magazines and Periodicals*.
21. Nelson, M., & Moss, Q. Z. (2005, April). Measuring facilities management performance: measuring the improbable. In *Proceedings of the European Facility Management Conference* (Vol. 19).
22. Nutt, B. (2000). Four trails to the future. In B. Nutt & P. Mclennan (Eds.) *Facilities Management Risk and Opportunitie*s (pp. 157-169). Oxford: Blackwell Science.
23. Odiete, D. E. (1998). *Application of facilities management in the Nigerian public and private Sector*. Proceeding of 28th Annual conference of the Nigerian Institution of Estate Surveyors and Valuers. 24th-29 March. Facilities Management in Nigeria, The Estate Surveyors and Valuer's Perspective (p.9-28). Kano, Nigeria.
24. Oseland, N., & Bartlett, P. (1999). The bottom line benefits of workplace productivity evaluation. *Facilities Management Journal*, *7*(4) 17-18.
25. Varcoe, B. J. (1996). Facilities performance measurement. *Facilities 14*(10/11) 46-51.

***Corresponding Author:** Okoro Anthony Chinemenma