An Evaluation of Utilities, Facilities and Services Performance in University of Jos and Plateau State University, Bokkos

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Abstract

The research was aimed at assessing the levels of facilities performance in University of Jos and Plateau State University, Bokkos, with a view of improving the levels of facilities performance of both universities for efficiency, effectiveness, and sustainable performance of the facilities to attain the intended life expectancy of the both universities' facilities and other similar tertiary institutions both within and outside Nigeria. The research employed a cross-sectional survey design and a quantitative research approach. The research used close-ended questionnaire instruments to collect relevant and pertinent data. A total of three hundred and twenty-two (322) and two hundred and eighty-five (285) questionnaires were administered to the respondents, 200 level, 300 level, and 400 level students on the campus of both universities respectively. Out of the total number of the questionnaires administered to the respondents, two hundred and eighty-five (285) and two hundred and eleven (211) were retrieved and used. The study adopted simple random sampling for arriving at the sample size. The research data were analyzed descriptively using SPSS Version 22. The findings revealed that levels of facilities performance for student hostels, toilets, water, and electricity was ranked 1st, 2nd, and 3rd respectively followed by other facilities in the University of Jos. Furthermore, levels of facilities performance for student hostels, toilets, and lecture theatres were ranked 1st, 2nd, and 3rd respectively followed by other facilities for Plateau State University. The study recommended that; Catering services, shopping for toiletries, and cafeteria, and waste disposal should be adequately provided for students in a serene learning environment in the University of Jos. Water and electricity, catering services, computer and ICT, sports facilities, and waste disposal should as a matter of urgency adequately provided for in the institution for students to improve their wellbeing and be mentally alerted to learn trends in information communication technology and other aspects and meet up with international best practices. Government or stakeholders of the universities should develop facilities service performance assessment for facilities managers for evaluating and communicating the performance of the services of facilities and also to detect any defects and replace it as this would help in extending the lifespan of the facilities in both Universities.

Keywords: *Building Performance, Facilities, Services, Utilities and User Satisfaction.*

Introduction

If the residents are satisfied with the service, the facility (or building) can be considered completed and vice versa. Gopikrishnan and Paul (2016) stated that all completed facilities should consider user needs related to architecture, function and finance. The physical aspects relate to the structure and properties of the building, the relationship between the functional aspects of the facility and the tenants, and the financial aspects of the building (capital costs/life cycle costs). These aspects are designed to meet the needs, expectations and desires of users. A facility's performance can be viewed from different perspectives and goals can vary from person to person.

Laitinen (2016) defines success as the ability of a measured object (such as a university, company, team, or employee) to generate results with predetermined characteristics linked to predetermined goals. The term achievement can be understood in different ways. It refers to the actual result or output of certain activities. For example, business performance can be evaluated based on the company's financial performance, the way its operations are conducted, and its ability to achieve goals. Performance can also relate to actual results, activities, or potential for results. Amaratuga and Baldry (2002) describe measuring service performance as the process of evaluating progress toward a predetermined goal. The basis for measuring the performance of installation services is the qualification of the elements that influence organizational goals, management control, and evaluation (Hasbullah et al., 2017).

From a classical management perspective, it is necessary to assess facility and utility performance to guide management decision-making, and since facility management (FM) is a subset of general management, measuring service performance is appropriate for management in FM. environment (Amaratunga & Baldry, 2002). Measuring service performance is the engine of the organization's innovation process.

Alexander (2016) pointed out that measuring facility services performance is one of the “three fundamental issues for effective implementation of facility strategies”. Therefore, for the rationality of the general management and to support the management and practice within the FM organization, to use the facilities/buildings effectively to make students comfortable in Nigerian universities, the measure is becoming more and more important.

Associates (1994) identified three measurement components of facilities performance, namely physical, functional and financial. The physical performance relates to the behavior of the facilities/building's fabric and embraces physical properties, such as structural integrity, lighting, heating, energy efficiency, maintainability, and durability.

Functional performance refers to the relationship of the facilities/building with its users and addresses issues such as space, economics, health, safety, and flexibility. The financial performance arises from the physical and functional performance of the facilities/building and comprises capital and recurrent expenditures.

The greatest influence upon an organization's core objective is the functional performance of its facilities, which can account for 80 to 90 % of its total cost (Valins & Salter, 1996). Thus, facilities in the University of Jos and Plateau State University and other university facilities within Nigeria ought to be adequately maintained and service performance improved upon for students on campus to have a good learning experience and meet up their aspirations.

Performance

Performance is therefore related to a building's ability to contribute to the function of its intended use (Williams, 1993). Simply put, the achievement is an achievement that is contrary to intention (Gagendran, 2000). Hronec (1993) lists four potential benefits of good performance:

Measurement system: users of meeting facilities; monitoring the progress of users using the facilities; comparative analysis
And make changes to improve platform and building performance, add value to users' lives.

Building Performance

A university, like any other organization, tries to improve its handling of higher operating costs and higher user expectations (Varcoe, 1996a). When considering a particular university, such as Jos University and Plateau State University, it may have a wider range of different building types and more diverse operational needs than most other organizations.

Although the characteristics of higher education contribute to quality education, the interrelationships in the organizational environment are a catalyst for performance

improvement (Moohan, 1993). Therefore, the facilities of Jos University and Plateau State University, and other universities in Nigeria must be properly maintained in order to achieve the expected lifespan and increase the productivity, efficiency, and effectiveness of staff and students.

Customer Satisfaction

User satisfaction is considered to be based on the user experience encountered by a particular service (Cronin & Taylor, 2014). This corresponds to the performance quality of the building as a determinant of user satisfaction, because the performance quality is the result of the installation services of the service providers in the organization. Institutions that provide higher education services are now realizing that their facility services and education can be seen as the same services as commercial services to customers. Meet the needs of end-users as students by providing adequate public facilities and services on campus (De-Shields, Kara & Kaynak, 2015).

Student satisfaction and student learning should be important outcomes for institutions (Applenton and Krentler, 2016). Parasuraman, Zeithan, and Berry (2013) recognized that "user satisfaction is based on the level of quality derived from the building performance of the building. Linking it to the views of these authors, it is clear that the definition of user satisfaction with a building It means a derivative service of prediction and perception; since service quality is one of the factors that influence satisfaction, user satisfaction is very important for the performance of buildings, utilities/facilities, as it will improve the learning experience of students of Jos University And the employee performance at Plateau State University and other universities in Nigeria.

University Facilities Performance Requirements

Decision-makers in higher education institutions should choose the most appropriate maintenance procurement options for the full performance of the facilities in the university to optimize costs, improve service quality and efficiency, and respond to the need for greater responsibility (Ikediashi, Ogunlana, and Bowles, 2018).

University facility services performance aims to provide students with specific purpose materials to enhance their learning experience. A variety of facilities are provided in the school system to promote teaching and learning and to provide

effective services to students. Make use of these facilities offered;

- To illustrate concepts
- Provide an opportunity for firsthand experience
- For experimentation and demonstration
- For scientific investigation and discovery
- To provide a diversity of thoughts
- For observation and inquiry
- For the development of scientific attitudes and skills
- To protect the individual, sustained facilities life cycle by ultimately maintaining the facilities for full performance and also providing comforts and effective services for the students.

Facilities Performance in Universities

Hashim, Saleh, Kamarulzaman, and Hashim (2011) assessed the facility management performance of the International Islamic University of Malaysia (IIUM). The investigation found that prior to the establishment of IIUM Properties Facility Management Services, Facility Management Services were managed in-house, responsible for leading the new concept of Facility Management Services Outsourcing. The researchers further speculated that the agency had outsourced some services and partnered with contracting companies to provide facilities management services for the sole purpose of transferring the technology.

The research divides facility services into technical and non-technical services. Researchers use four key performance indicators to assess the performance of university facilities management. These key performance indicators are flexibility, effectiveness, efficiency, and creativity. The researchers pointed to the flexible structure of the facility maintenance unit of the public-private partnership. The survey identified key performance indicators to assess facility management performance but did not specify how universities can assess facility performance to improve the productivity of faculty, staff, and faculty students. Christos, Ming, and Aspasia (2013) on the performance and value of higher education institutions.

The results show that the potential for facility performance and maintenance to create value for higher education institutions (HEIs) and students by promoting student enrollment and enhancing the learning experience for students may even be superior to building

new high-quality facilities. The document shows that the facilities create value and satisfaction for higher education institutions and students, rather than building new facilities. This article does not assess the level of service performance derived from university facilities.

Fianchini (2007) reported on the findings of a team commissioned by the management of Politecnico di Milano, Italy, who studied methods for evaluating the performance and damping of buildings. The study confirmed the importance of the "Journal of Facilities Management and Research", determined the needs of different user groups, and completed the parameter check and size verification, as well as user surveys and behavioral observations to verify the applicability of the building. This article failed to evaluate facility performance in the organization to determine how the facility can achieve its expected life through a routine maintenance to achieve the best facility service performance.

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Karnal and Julin (2015) propose that in a quiet learning environment, comfortable and charitable facilities/buildings and utilities are more important for students, while employees pay more attention to laboratories and educational facilities. In most cases, with the exception of a few facilities/buildings that are used for specific purposes, teachers, staff, and students use most public facilities to achieve sustainable efficiency.

The existing facilities of Jos University and Plateau State University Bocos, such as student housing, toilets, sports facilities, libraries and laboratories, water and electricity, landscaping, furniture (chairs and tables), accessories and fixtures, food services, Whiteboard and blackboard

computers, ICT, etc. As an astronomical number of students enter the university every year in search of knowledge to improve themselves and contribute to the development of the country, these facilities are overwhelmed. The existing facilities in the organization must maintain full efficiency/function to meet the expected lifespan.

Many abandoned and epileptic traits or poor facility activity in Nigerian universities can be traced back to the lack of effective, efficient, and sustainable assessments of facility activity to achieve longevity. This is consistent with Fanie (2018), who reported that improper care of the authorities and users of colleges will ultimately reduce the performance and lifespan of the facilities, resulting in poor service performance.

In order to evaluate facility service performance in a comprehensive manner, facility data must be linked to significant organizational data. These data link the physical, spatial, and environmental issues that describe the characteristics of the facility with information on the operational behavior of administrators and users and the overall financial impact (Nat, 2016). In addition, by improving facility performance in a dynamic environment and using facility performance as a means of organizational/institutional efficiency, continued optimism requires a reliable facility performance evaluation framework, supported by Gagendran (2018). "The true meaning of facility performance" and "being able to assess the performance of Jos University and Plateau State University facilities" are the most important things to start evaluating public utilities, facilities, and services. Jos University and Bocos Plateau State University, and use the results of this research to improve the performance of services or facilities of Nigerian universities.

Research Methodology

This study uses simple random sampling because the two case studies share the same characteristics. The target audience consists of 200, 300, and 400 students on the Jos University campus, and only 200 students on the Bocos Plateau State University campus. There are 100 level and 200 level students on the Plateau State University campus.

This study employs only 200 graduate students on the Plateau State University campus. They have been using the facilities on campus for more than a year and have the necessary experience for this research, the

necessary data. The research framework for Jos University is 2054, the Bocos Plateau State University is 1070, and the sample size for Jos University and Plateau State University is 322 and 285 respectively (UNIJOS & PLASU, 2021). Use the sample size determination table from Krejcie and Morgan (1970) to determine the sample size.

This study uses a cross-sectional research design that requires data from multiple cases and a single time point to collect and then control a large amount of quantitative or quantifiable data related to two or more variables to detect association patterns (Hughes, 2013). The method of data analysis is to use the Social Science Statistics Software Package (SPSS) for descriptive statistics (Mean Ranking) to make the research results easy to understand. The data measurement technique used is orderly. The data is entered and encoded according to the mean ranking of the variables, a descriptive test is performed to ensure that the mean is entered correctly.

A preliminary study was conducted among students using 50 questionnaires. The results showed that the dormitories, toilets, lecture halls, whiteboards and blackboards of the two universities, as well as the furniture (seats and decks) of the two universities were all fully equipped.

A 5-point Likert scale based on a closed questionnaire was used to obtain the answers for the independent and dependent variables. Based on the data analysis. The research generated quantitative data from structurally structured projects. Use the Social Science Statistics Package (SPSS) to analyze the code data.

Results

Demographic Information of the Respondents

Table 1 has shown that 61.1% of the respondents for this study are male, 38.9% of the respondents for the study are female. This indicates that the highest numbers of the respondents for this study are male. Furthermore, 96.8% of the respondents for the study are single, while 3.2% of the respondents for the study are married. The findings revealed that the highest numbers of respondents for the study are single.

Moreover, respondents for the study with the age of fewer than 20 years were 17.3%, and 21 years to 30 years were 66.7% respondents whose age is 21years to 30 years were 66.7%, respondents whose age are 31year and above were 15.9%. The

educational level of the respondents for the study in 200 levels was 61.7%, the educational level of respondents for the study in 300 levels was 20.6%, while the educational level of respondents for the study in 400 levels was 17.7%.

Table 1: Demographic Information of the Respondents

S/N	Items	Descriptive	Frequency	%
1.	Gender	Male	303	61.1
		Female	193	38.9
		Total	**496**	**100**
2.	Marital status	Single	480	96.8
		Married	16	3.2
		Total	**496**	**100**
3.	Age Brackets	Less than 20 years	86	17.3
		Between 21 years to 30 years	331	66.7
		31 year and above	79	15.9
		Total	**496**	**100**
4.	Educational level	200level	306	61.7
		300level	102	20.6
		400level	88	17.7
		Total	**496**	**100**

Table 2 revealed that levels of facilities performance for University of Jos is as follows: students' hostels with M = 3.97; SD = 1.18 was ranked 1st , toilets with M = 3.97; SD = 1.18 ranked 2nd , and lecture theatres with M = 3.72; SD = 1.17 ranked 3rd . Furthermore, furniture (chairs and desks) with M = 3.91; SD = 1.20 was ranked 4th , white and black board with M = 3.85; SD = 1.13 was ranked 5th , catering services with M = 3.82; SD = 1.17was ranked 6th , water and electricity with M = 3.81; SD = 1.19 was ranked 7th , library and laboratory with M = 3.79; SD = 1.21 was ranked 8th , computer and ICT with M = 3.80; SD = 1.20 was ranked 9th , fittings and fixtures with M = 3.77; SD = 1.14was ranked 10th , shop for toiletries and cafeteria with M = 3.68; SD = 1.5 was ranked 11th , sport facilities with M = 3.65; SD = 1.36 was ranked 12th , land scaping with M = 3.63; SD = 1.12 was ranked 13th and finally, waste disposal with M = 2.22; SD = 1.12 was ranked 14th was not fully provided for in university of Jos.

Table 2 Shown Mean Ranking for Respondents' Opinion on Levels of Utilities and Facilities Performance in University of Jos

S/N	Items	N	$\overline{X}$	SD	Rank	Remark
1.	Student hostels	285	3.97	1.18	1st	Fully accessible/ Functional
2.	Toilets	285	3.97	1.18	2st	Fully accessible/ Functional
3.	Lecture theatres	285	3.92	1.17	3rd	Fully accessible/ Functional
4.	Furniture (chairs and desks)	285	3.91	1.20	4th	Fully accessible/ Functional
5.	White and black board	285	3.85	1.13	5th	Fully accessible/ Functional
6.	Catering services	285	3.82	1.17	6th	Not Fully accessible/ Functional
7.	Water and electricity	285	3.81	1.19	7th	Fully accessible/ Functional
8.	Library and laboratory	285	3.79	1.21	8th	Fully accessible/ Functional
9.	Computer and ICT	285	3.80	1.20	9th	Fully accessible/ Functional
10.	Fittings and fixtures	285	3.77	1.14	10th	Fully accessible/ Functional
11.	Shop for toiletries and cafeteria	285	3.68	1.15	11th	Not Fully accessible/ Functional
12.	Sport facilities	285	3.65	1.36	12th	Fully accessible/ Functional
13.	Land scaping	285	3.63	1.12	13th	Fully accessible/ Functional
14.	Waste disposal	285	2.22	1.12	14th	Not Fully accessible/ Functional
Grand Mean			**3.69**			

Key: $\overline{X}$ = Mean and SD = Standard Deviation

Table 3 has shown that levels of facilities performance for Plateau State University is as follows: student hostels with M = 3.83; SD = 1.48 ranked 1st , toilets with M = 3.83; SD = 1.48 ranked 2nd , catering services with M = 3.72; SD = 1.11 ranked 3rd, lecture theatres with M = 3.57; SD = 1.12ranked 4th, furniture (chairs and desks) with M = 3.55; SD = 1.06 ranked 5th , water and electricity with M = 3.53; SD = 1.14 ranked 6th , white

and black board with M = 3.52; SD = 1.11 ranked 7th , library and laboratory with M = 3.49; SD = 1.16 ranked 8th , computer and ICT with M = 3.41; SD = 1.00 ranked 9th , shop for toiletries and cafeteria with M = 3.41; SD = 1.00 ranked 10th , fittings and fixtures with M = 3.33; SD = 1.08 ranked 11th , land scaping with M = 3.32; SD = 1.07 ranked 12th , sport facilities with M = 3.30; SD = 1.23 ranked 13th , and waste disposal with M = 2.77; SD = 1.29 ranked 14th .

Table 3 Mean Ranking for Respondents' Opinion on the Levels of Facilities Performance in Plateau State University, Bokkos

S/N	Items	N	$\overline{X}$	SD	Rank	Remarks
1.	Student hostels	211	3.83	1.48	1st	Fully accessible/ Functional
2.	Toilets	211	3.83	1.48	2nd	Fully accessible/ Functional
3.	Catering services	211	3.72	1.11	3rd	Not Fully accessible/ Functional
4.	Lecture theatres	211	3.57	1.12	4th	Fully accessible/ Functional
5.	Furniture (chairs and desks)	211	3.55	1.06	5th	Fully accessible/ Functional
6.	Water and electricity	211	3.53	1.14	6th	Not Fully accessible/ Functional
7.	White and black board	211	3.52	1.11	7th	Fully accessible/ Functional
8.	Library and laboratory	211	3.49	1.16	8th	Fully accessible/ Functional
9.	Computer and ICT	211	3.41	1.09	9th	Not Fully accessible/ Functional
10.	Shop for toiletries and cafeteria	211	3.41	1.00	10th	Fully accessible/ Functional
11.	Fittings and fixtures	211	3.33	1.08	11th	Fully accessible/ Functional
12.	Land scaping	211	3.32	1.07	12th	Fully accessible/ Functional
13.	Sport facilities	211	3.30	1.23	13th	Not Fully accessible/ Functional
14.	Waste disposal	211	2.77	1.29	14th	Not Fully accessible/ Functional
	Grand Mean		**3.47**			

Key: $\overline{X}$= Mean and SD = Standard Deviation

Discussion of Findings

An evaluation of utilities, facilities and services performance in university of Jos and Plateau State University, Bokkos. It contains 14 items and grand mean of 3.69 and 3.47 respectively for the both Universities.

For University of Jos, student hostels with M = 3.97; SD = 1.18 was ranked 1st , toilets with M = 3.97; SD = 1.18 ranked 2nd , lecture theatres with M = 3.72; SD = 1.17 ranked 1.17, furniture (chairs and desks) with M = 3.91; SD = 1.20 ranked 4th , white and black board with M = 3.85; SD = 1.13 ranked 5th , catering services with M = 3.82; SD = 1.17 ranked 6th was not fully accessible/functional.

Water and electricity with M = 3.81; SD = 1.19 ranked 7th , library and laboratory with M = 3.79; SD = 1.21 ranked 8th , computer and ICT with M = 3.80; SD = 1.20 ranked 9th , fittings and fixtures with M = 3.77; SD = 1.14 ranked 10th , shop for toiletries and cafeteria with M = 3.68; SD = 1.5 ranked 11th was not fully accessible/functional. Sport facilities with M = 3.65; SD = 1.36 ranked 12th , land scaping with M = 3.63; SD = 1.12 ranked 13th and waste disposal with M = 2.22; SD = 1.12 ranked 14th was not fully accessible/functional in university of Jos. For Plateau State University, Bokkos, Student hostels with M = 3.83; SD = 1.48 was ranked 1st , toilets with M = 3.83; SD = 1.48 was ranked 2nd , catering services with M = 3.72; SD = 1.11was ranked 3rd was not fully accessible/functional.

Lecture theatres with M = 3.57; SD = 1.12 was ranked 4th, furniture items (chairs and desks) with M = 3.55; SD = 1.06 was ranked 5th , water and electricity with M = 3.53; SD = 1.14 was ranked 6th was not fully accessible/functional, white and black board with M = 3.52; SD = 1.11 was ranked 7th , library and laboratory with M = 3.49; SD = 1.16 was ranked 8th , computer and ICT with M = 3.41; SD = 1.00 was ranked 9th was not fully accessible/functional.

Shop for toiletries and cafeteria with M = 3.41; SD = 1.00 was ranked 10th , fittings and fixtures with M = 3.33; SD = 1.08 was ranked 11th , land scaping with M = 3.32; SD = 1.07 was ranked 12th , sport facilities with M = 3.30; SD = 1.23 was ranked 13th was not fully accessible/functional and waste disposal with M = 2.77; SD =1.29 was ranked 14th which indicates that it is not fully accessible/functional in Plateau State University, Bokkos.

Therefore, the findings of this study are in line with Karnal and Julin (2015) who submitted that comfortable well perform facilities/building and utilities in a serene learning environment is of more importance to students, however, staff members give more value to the laboratory and teaching facilities.

Also, the study is in line with the opinion of Gagendran (2018), who opines that enduring optimism towards facilities performance as a means of organizational/institutions effectiveness through enhancing facilities performance in a dynamic environment requires a dependable framework for the evaluation of facilities performance.

Conclusion and Recommendations

This study assessed the evaluation of utilities, facilities and services performance in University of Jos and Plateau State University, Bokkos, with a view to improving the levels of their performance; this is with ultimate aim of achieving efficiency and sustainability of the facilities for both universities and to attain the expected life span.

The study established that student hostels, toilets, lecture theatres, library and laboratory, catering services, furniture items (chairs and desks), water and electricity were fully accessible and functional in both universities. Other items that were also fully accessible and functional in both universities are: white and black board, fittings and fixtures, land scaping.

The study further revealed that student hostels, toilets, lecture theatres, furniture (chairs and desks), white and black board, library and laboratory, shop for toiletries and cafeteria, fittings and fixtures and land scaping are fully accessible/functional in Plateau State University, Bokkos. Based on the findings of the above study, the following recommendations were made in order to achieve enhancement and improvement on the current situation of the existing utilities, facilities and services in the study areas and other areas with similar antecedents as follows;

i. Catering services, shop for toiletries, cafeteria as well as waste disposal should be adequately provided for students in a serene learning environment in University of Jos.
ii. Water and electricity, catering services, computer and ICT, sport facilities and waste disposal should

as a matter of urgency adequately provided for in the institution for students to improve their wellbeing and be mentally alerted to learn trends in information communication technology and other aspects and meet up with international best practices.

iii. Government or stake holders of the universities should develop a strategies for the assessment of utilities, facilities and service performance assessment and evaluating as well as communicating the services performance of facilities and to detect any defects and replace it accordingly as this would help in extending the lifespan of the facilities in both Universities.

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