Physical Resource Utilization and Internal Efficiency in Nigeria Universities

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Abstract
Inrecent times, concerted efforts have been made on resource allocation and utilization to achieve internal efficiency in the university system. This study investigated the relationship between physical resource utilization and internal efficiency in Nigerian Universities. The population for this study comprised all the 32 public universities (Federal and State) established before year 2005 and which offered courses in humanities and sciences only. Twenty four universities, that is, 75% were selected for the study through stratified random sampling technique. Furthermore, 2700 out of 4084, that is, 66.11% of the total population of senior lecturers and above in the faculties of humanities and sciences in the sampled Nigerian universities were selected as participants for the study through proportional stratified random sampling technique. Checklists titled, "Resource Utilization Checklist" (RUC) and "Internal Efficiency Checklist" (IEC) were used to collect relevant data from the participants. Two research questions and one hypothesis guided the conduct of the study. Data gathered were statistically analyzed, using Statistical Package for Social Sciences (SPSS) version 20. Time Utilization Rate (TUR), Space Utilization Rate (SUR), Global Utilization Rate (GUR), Refined Cohort Wastage Rate (RCWR) and Graduation rate were computed from the data to answer the research questions. Also, Pearson product-moment correlation statistic was used to test the research hypothesis formulated in the study at 0.05 level of significance. The findings of the study indicated that Physical resource in the Nigerian Universities were over utilized with an average of 187%, 133% and 160% for Space Utilization Rate (SUR), Time Utilization Rate (TUR) and Global Utilization Rate (GUR) respectively. A significant relationship exited between physical resource utilization and internal efficiency in Nigerian universities. Based on the findings of this study, it was recommended that the facilities available in the institutions should be improved upon in order to accommodate more students. Concerted efforts should be made to reduce student wastage rate to the barest minimum by ensuring that admission is based more on merit.

Keywords: Physical resource, Utilization, Internal efficiency, Universities, Nigeria

Introduction

Society depends on the universities to produce well-adjusted individuals who can fit properly into the environment through effective use of available physical resource. The education industry, like the industrial sector, needs the use of physical resource for production to take place. Learning at the university level could be described as being effective if it results in bringing about the expected transformation in the attitudes, skills and knowledge of the recipients/students over a period of time (Akinnubi, 2010; Akinnubi, 2017).

Osawa (2004) viewed internal efficiency as internal operations of an organization relating to avoidance of wastages through the judicious use of physical resource that are available at a given time. Internal efficiency is a measurement of the use of resources to achieve the desired results. Thus, efficiency is the quality of doing things well with no waste of time or resources. Effective use of physical resource in the universities could help to reduce wastage of the available resources which, in turn, could help the universities to achieve their goals at a given time (Abdulkareem, 1990).

The Nigerian university system, like most other sectors of the economy, has borne the full brunt of the continuing economic crisis in the country. This has manifested in deteriorating teaching and learning facilities, incidence of brain drain and general instability which, together, have threatened maintenance of quality in terms of effective resource utilization at the institutions and sometimes their survival (NUC, 2007). Internal efficiency is concerned with the relationship between input and output within the educational system; or among individual institutions as well as how public resources are utilized to enhance students' academic performance in a given academic session.

Jerry (2005) noted that efficiency is a measurement of the use of resources to achieve the desired result, while internal efficiency was referred to as the effectiveness of the resources used to produce positive result. In the education sector, internal efficiency can be viewed as the number of students who pass from one grade level to the other and also complete the cycle based on the prescribed period of time. The very high standard with which the Nigerian university system was associated has been threatened to the extent that graduates of the system roam the streets without jobs and now face rejection or subtle discrimination in some foreign universities with insistence on entrance examination before admission into higher degree programmes.

One of the greatest concerns of Nigerian education is the question of quality assurance at all levels and the role of the various Governments-Federal, State, and Local in the achievement of quality education. A look at current trends over the last decades in quality evaluation and control leads to some concern as to where the country is and where it must go in search of minimum standard compatible with qualitative education. The need to stem the tide will stand as an indication of educational development in Nigeria. Meanwhile, dropping out by students before the completion of their academic course at the university level is regarded as a serious educational deficiency that can have adverse influence on students in the future.

Human resource within the educational system cannot work successfully without the use of material resources (Abdulkareem, 1989, Akinnubi, 2010; Akinnubi, 2015).

The available resources within the jurisdiction of the institution have a great role to play in the quality of its products in terms of students' academic performance. Adeboyeje (1994) observed that effective management of school physical facilities brings about facilitation of the educational process, morale of the teachers and students, usefulness in the determination of the worth of an institution, influence on the relationship between the school and the community and the utility of school as cultural, civic, recreational and youth centre. Hallanyc (1997) in his own observation identified facilities as major factors contributing to internal efficiency. The author submitted that facilities, apparatus and others should always be considered and made available.

Statement of the Problem

Rating educational standard is a highly debatable topic. Very few people, if any would disagree that school facilities in the Nigerian Universities are not in accordance with the students' population. If it is agreed that the available school buildings are inadequate, in quantity and quality, and that their utilization are the determining factors of academic excellence, then it would not be difficult to conclude why the standard of education for some time continued to take downward turn at the university level. Durosaro (1998) lamented that owing to the resultant astronomical increase in school enrolment at all levels, school facilities have been subjected to over-utilization leading to greater frequency of breakdowns. Hence, this study investigated the relationship between physical resource utilization and internal efficiency in Nigeria universities.

Purpose of the Study

The purposes of this study are to:
i. examine the physical resource utilization in Nigerian universities
ii. determine the internal efficiency in Nigerian universities
iii. examine the relationship that exists between physical resource utilization and internal efficiency in Nigerian universities.

Research Questions

The following research questions were raised to guide the conduct of the study:
1. What is the physical resource utilization in Nigerian universities?
2. What is the internal efficiency in Nigerian universities?

Research Hypothesis

Ho: There is no significant relationship between physical resource utilization and internal efficiency in Nigerian universities.

Literature Review

Concept of Physical Resource Utilization

Utilization implies the degree or extent to which an item has been put into effective

use. In other words, it is the extent of usage of an equipment or item. If the item or equipment is not used maximally then, there is under-utilization of such item, but if maximally used, such an item is described as effectively utilized. If there is much pressure on the use of an item, this may result in over utilization, which usually leads to breakdown of such item or equipment. Optimal utilization of school physical facilities connotes the practice of using school facilities, for example, a building for as many purposes as possible thereby reducing the number of building as well as the total cost of providing buildings in the school. Broadly speaking, this concept demands thoughtful planning, adequate insurance, wise utilization and maintenance as well as proper keeping and evaluation of school physical facilities (Adeboyeje, 1994).

In order to make optimal use of physical facilities, school personnel and member of the community should have adequate knowledge of the functioning of such facilities, and the alternative uses to which they could be put. Without such knowledge, some items would be under-utilized while others would not be used at all. Educational resources remain a pillar upon which the attainment of the aims and objectives set for any level of education in general rest. The available resources in education broadly include human, physical and financial. Akinnubi (2010) stated that resources are usually a scarce commodity whether material or human and that no venture can succeed when denied its provision and adequate utilization. That is, students' internal efficiency largely depends on the utilization of the facilities provided by the institution.

Oni (1995) described educational resources as the sum total of the input that goes into the educational system. He supported his point by noting that educational resources are all the things that are used directly or indirectly for the purpose of supporting, facilitating, influencing or encouraging transmission or acquisition of knowledge, competence, skills and know-how.

Inadequate provision of the necessary material resources (classrooms, lecture theatres, laboratories, studios, chemicals, etc.) has resulted in the production of science graduates with no laboratory experience and graduates in humanities who never read any reference beyond the lecture notes. So, if Nigerian universities must produce quality graduates, then teaching and learning facilities must be provided and adequately utilized. Adeshina (1990) noted that literatures have shown that the quality of education that children received bears direct relevance to physical facilities. There is, therefore, the need to ensure that they are effectively utilized.

Oyedeji (1998) suggested that the classroom should be large with adequate gang ways to afford staff and students easy movement. The provision of desks and seats, chalkboard, teaching aids and cupboard is part of the ingredients for effective learning. Classroom management is the key element of the teaching learning process, which the teacher should adopt before any meaningful knowledge can be imparted to students. Administrators especially confirmed that improperly maintained classroom reduces the teachers' effectiveness and quality of students learning. Rules guiding the activities of the classroom should be few and simple to be carried out by students. Such rules should also be clear and void of ambiguity.

Lubans (1994) asserted that before any purposeful utilization of the library can be accomplished in schools, certain minimum physical and material requirements must be present. One of which is space, adequate library space for each student to browse or study, for a small group of work, for entire class to meet. Most students begin their education in library. This is an important provision that will likely form the basis of the students' favourable or unfavourable attitude towards libraries which in turn contribute positively or negatively to academic performance of the students.

The nation's educational system is based on the integration and modeling of the individual into a sound and effective citizen and the provision of equal opportunities for citizens at the primary, secondary and tertiary level of education. The implication of this expectation is that libraries should be well equipped and managed for the attainment of self-reliance and the making of well-rounded citizenry. Ajayi (2001) wrote in support of the need for students to have access to relevant information sources to augment their study. Ajayi (2001) stated that a student without access to supplementary reading material as provided for by a library would be seriously handicapped, while his academic success would be based largely on his ability to memorize lecture notes. Libraries are essential educational institutions by their very nature. They are often described as a collection of books, print and non-print materials. However, if these collections are not effective in meeting the user's information and needs, the library cannot be said to be functional. Libraries, therefore, are regarded as the heart of any institution of learning in any academic community; the library provides resources to aid the curriculum, teaching /learning and research.

Higher education is internationalizing. There have always been students who travelled across national boundaries to attend higher educational institutions in another country today, which is far more profound. There is the new world of virtual education, the wide-spread use of the internet as a source of reference materials, and an increasingly mobile workforce who carry their credentials across boundaries, yet what we have seen is only the beginning (Akinnubi, 2010). This is the right time for us to have a policy shift from kindergarten to the university. The teaching of Information and Communication Technology (ICT) must be made compulsory.

Aremu (2002) noted that a good curriculum is one which has breath, is balanced, relevant and ensures continuity. The author went further to ascertain that the computer does not only help to ensure these characteristics but goes further to support the variety of aims proposed through the curriculum. In supporting a balance of activities, the computer can facilitate almost all the learning experiences of the student.

The laboratory is an integral physical resource in the university which has a direct bearing on students work. It is often considered as an integral part of science technology and learning processes. Daramola (1994) further classified it into two broad areas: real scientific experiments and standardized laboratory exercise.

The real scientific experiments are described as those experiments which are normally initiated by learners and carried out by the learners themselves. The students' laboratory exercises are those planned laboratory activities in which a

teacher gives detailed instruments and directions to learners on what to do during the exercise. The real scientific experiments are meant to: stimulate students thinking about science; encourage learners to develop the spirit of discovery as a method of acquiring knowledge of science; develop and challenge learners' manipulative abilities; familiarize students with the limitations of experimentation; and encourage students to appreciate the need for caution in drawing conclusion from experiment work.

The major goals of the standardized laboratory exercises in science teaching and learning processes include: teaching learners how to understand and interpret instructions; teaching learners how to keep good records and how to take responsibilities for their work; determine learners strength and limitations in experimental work; and creating excitement and encouragement (Daramola, 1994).

Laboratory is very important in Nigerian universities for effective teaching and learning of science and art subjects, and because it is related to the achievement of desired educational goals and objectives.

Measurement of physical resource utilization rate

According to Adeogun (2000) and Ogunu (2000), the popular methods that are used in the computation of the utilization of physical resources are: Time Utilization Rate (TUR), Space Utilization Rate (SUR) and Global Utilization Rate (GUR)

1. Time Utilization Rate (TUR): Madumere (1991) expressed that Time Utilization Rate (TUR) measures the percentage of effective teaching hours over official hours of utilization. Time utilization rate of resources refers to the proportion of time of putting a classroom or school facility to effective use .Thus:

$$TUR = \frac{\text{No of hours use per week}}{\text{Theoretical time use per week}} \times \frac{100}{1}$$

2. Space Utilization Rate (SUR): This compares the average number of candidates attending classes with number of places available in the lecture room. Also, space utilization is the proportion of a room that is put to use at any particular point in time. It comprises the actual size of a classroom occupied by the population of students with the official size (Oni, 1995). It is expressed below:

$$SUR = \frac{\text{Average no of candidate attending}}{\text{No of places available in the lecture room}} \times \frac{100}{1}$$

3. Global Utilization Rate (GUR): This gives percentage of number of hours and places occupied and number of theoretical hours or places. Thus:

$$GUR = \frac{TUR + SUR}{2}$$

Concept of Internal Efficiency

The notion of efficiency has its origin in economics, but equally applies to education. Every activity has to start by defining the objectives or output expected. To achieve those objectives, certain means or inputs are available. Efficiency is defined as the optimal relation between inputs and outputs. An activity is being performed efficiently if a given quantity of outputs is obtained with a minimum of inputs, or alternatively, if a given quality of inputs yields maximum outputs. The internally efficient educational cycle /system is one which turns out graduates without wasting any students-year or without dropouts and repeaters. But the same cycle may be externally quite inefficient if the graduates turn out may not be what the society, economy or higher levels of education want (Ayo, 1995).

According to Padmanghan (2001), internal efficiency refers to the number of students who pass from one grade to the other and complete that cycle within the stipulated period of time. It shows the relationship between input and output at a given educational level. Gupta (2001) noted that the question of internal efficiency is ultimately linked to the issue of resources allocation utilization. One would expect that the more inputs are allocated and utilized the more the returns. Education inputs comprise the buildings, teachers, books, teaching materials etc which may be aggregated financially in terms of expenditures per pupil-year. However, the number of student-years used by a cohort of students to graduate constitutes an input indicator appropriate for the measure of efficiency in education. One student who spends one year at school is said to have spent one student-year. In this way, efficiency can be related to the amount of inputs expressed in monetary terms through the number of student-year used. Therefore, it is noteworthy to assert that efficiency is the achievement of the ends with the least amount of resources.

Indicators of internal efficiency in the school system

Many authorities such as Ayo (1991), Durosaro (1991), Afolabi (2006) and so on have written about the different indicators of internal efficiency and wastage in the educational system. The indicators of internal efficiency include the following: progression, wastage and graduation rates among others:

a. **Progression rate**: This refers to the actual number of pupils promoted to a subsequent grade as a ratio of the number enrolled in the previous year multiplied by 100. It also shows the rate of movement of students from one level to another, usually from a lower level to a higher level. It is mathematically denoted as:

$$P^t_g = \frac{P}{E} \times \frac{100}{1}$$

Where:
P^t_g = grade promotion rate
P = number of students promoted to class g +1 in year t +1
E^t_g = total number of students in class g in year t.

b. **Wastage rate:** It is used to describe un-certificated school leavers, who left

school system before the completion of the course, wastage may also occur between grade level, that is, those students who repeated the grade and those who drop out of the system between the grade levels or before the completion of the cycle

$$W^t_g = \frac{E^t_g - P}{E^t_g} \times \frac{100}{1}$$

Where: W^t_g = Wastage rate

E^t_g = Enrolment at a given grade level
P = Number of promoters

Crude cohort wastage rate: This is the percentage of repeaters and drop outs from the first year to the final year of academic sessions of a given cohort of students.

$$CCWR = \frac{E^t_g - E}{E^t_g}$$

Where CCWR- Crude Cohort Wastage Rate:
E^t_g = Enrolment at the first grade level
E = Enrolment at the final grade level

Refined cohort wastage rate: This is the relationship between those who passed out or the graduates and the enrolment at the first grade. This is based on the basic fact that not all that reached the final year took the final year examination or passed. It could be expressed thus:

$$RCWR = \frac{E^t_g - G}{E} \times \frac{100}{1}$$

Where RCWR = Refined Cohort Wastage Rate:

E^t_g – number of enrolment at year t in class g
G – graduates
E – total enrolment

i. Repetition rate: This refers to the number of students who repeat a grade in the succeeding year as a percentage of the original enrolment in the same grade. It could be defined mathematically as:

$$R^t_g = \frac{R^{t+1}_{t+1}}{E^t_g} \times \frac{100}{1}$$

R^t_{g+1} = number of students repeating class g in year t +1
E^t_g = total number of students in class g in year t

ii. **Drop-out rate**: It refers to the number obtained when relating the number of students who withdraw from the system as a percentage of others in the class. This implies the students who are unaccounted for after deduction of the numbers

promoted to the next class and the number meant to repeat from the total enrolled in the class.

$$D^t_g = E^t_g - (R + P) \times \frac{100}{E^t_g} \quad \frac{}{1}$$

Where: D^t_g = refers to the dropout rate
E^t_g = refers to the enrolment in year t in class g
R = refers to repeaters in year t + 1 in class g + 1
P = refers to promoters

iii. **Graduation rate: This r**efers to the percentage of the students enrolled in the final grade of the level that finally leaves the system on completion of the course. This is very vital to the work of educational planners because it enables them to compute the input-output ratio in determining the efficacy of the system.

$$G^t_R = \frac{E^t_g - R^t}{E^t_g} \times \frac{100}{1}$$

G^t_R = Graduate rate
E^t_g = enrolment at the final year in year t in class g
R^t_g = number repeating the final year in year t in class g

Methodology

The research design for this study was a descriptive survey. The population for this study comprised all the 32 public universities (Federal and State) established before year 2005 and which offered courses in humanities and sciences only. Twenty four universities, that is, 75% were selected for the study through stratified random sampling technique. Furthermore, 2700 out of 4084, that is, 66.11% of the total population of senior lecturers and above in the faculties of humanities and sciences in the sampled Nigerian universities were selected as participants for the study through proportional stratified random sampling technique. The two checklists titled, "Resource Utilization Checklist" (RUC) and "Internal Efficiency Checklist" (IEC) were used to collect relevant data from the respondents. RUC was used to obtain data on physical resource (lecture rooms, libraries, ICT centres and laboratories). IEC was used to obtain data on students' enrolment from 2003/2004 to 2005/2006 academic sessions. Experts in the areas of Educational Management and Measurement and Evaluation validated the instruments designed for this research work. The researchers administered copies of the checklists designed on the respondents in the sampled universities. Research assistants were used to complement the efforts of the researchers in the institutions. Data gathered on resource utilization and internal efficiency in the universities were statistically analyzed, using Statistical Package for Social Sciences (SPSS) version 20. Time Utilization Rate (TUR), Space Utilization Rate (SUR), Global Utilization Rate (GUR), Refined Cohort Wastage Rate (RCWR) and Graduation rate were computed from the data to answer the research questions. Also, Pearson product-moment correlation statistic was used to test the research

hypothesis formulated in the study at 0.05 level of significance. The yardstick for utilization rate is 1.00% - 99% = under utilization, 100% = optimum utilization and >100 = over utilization

Results and Discussion

Research Question 1: What is the physical resource utilization in Nigerian universities?

To answer this question, the total number of actual number of students, statutory number of spaces provided, actual number of hours and statutory number of hours were obtained in the sampled faculties to compute the Space Utilization Rate (SUR), Time Utilization Rate (TUR) and Global Utilization Rate (TUR) as shown in Table 1.

Table 1

Rate of physical resource utilization in the sampled Nigerian universities

Physical Resource	ANS	SNS	SUR(%)	ANH	SNH	TUR (%)	GUR (%)
Lecture rooms	912	350	260	10	8	125	193
Libraries	650	300	216	14	10	140	179
ICT centres	133	100	133	11	8	138	135
Laboratories	205	150	137	12	9	129	133
Total			746			532	640
Average			187			133	160

ANS- Actual Number of Students ANH-Actual Number of Hours
SNS- Statutory Number of Space SNH-Statutory Number of Hours
SUR-Space Utilization Rate TUR-Time Utilization Rate
GUR-Global Utilization Rate

Table 1 shows the results obtained on Space Utilization Rate (SUR), Time Utilization Rate (TUR) and Global Utilization Rate (GUR) of lecture rooms, libraries, Information and Communication Technology Centres and Laboratories in the Nigerian universities. Lecture rooms had Space Utilization Rate of 260%, Time Utilization Rate of 125% and Global Utilization Rate of 193%. It is glaring from the findings that lecture rooms in the sampled universities were over utilized. An average of 912 students used the lecture rooms which was against 350 statutory number of students that ought to use the lecture rooms (see appendix v). This is an indication

that the lecture rooms would be over crowded whenever teaching/learning would take place. This could lead to low academic performance, as concluded in the study of Ibitoye (2007) that when classrooms were over utilized, students' academic performance would be retarded.

As shown in Table 1, in the sampled Nigerian universities, Space Utilization Rate, Time Utilization Rate and Global Utilization Rate for libraries were 216%, 140% and 179% respectively. This shows that libraries in the universities were over utilized. The reason might be that students in the institutions were using the libraries as their reading rooms in lieu of the lecture rooms that were not sufficient. Furthermore, it might be that the students were given assignment that would require them to use the libraries. Over utilization of the libraries might have adverse effect on the facilities in the libraries? In fact, this could lead to incessant breakdown of such facilities as furniture in the libraries.

Information and Communication Technology (ICT) Centres were over utilized in terms of space utilization (133%), time utilization (138%) and global utilization (135%). However, space, time and global utilization rates for laboratories in the study were 137%, 129% and 133% respectively. The total number of students that used the laboratories was 205 against 150 statutory spaces provided. This shows that ICT Centers and laboratories were overcrowded for use in the universities. This finding disagrees with John's (1992) and Council of Facility Planners' (2003) that over utilized buildings have negative consequences for learning process and suggested a strong link between level of utilization with students academic achievement. Obemeata (1991) argued that, most Nigerian schools are inadequate of physical resource in terms of classrooms, libraries, laboratories and administrative buildings which have effect on the students' academic performance. From the results on Table 1, it is evident that physical resources were over utilized, with an average of 187%, 133% and 160% as their space utilization rate, time utilization rate and global utilization rate respectively.

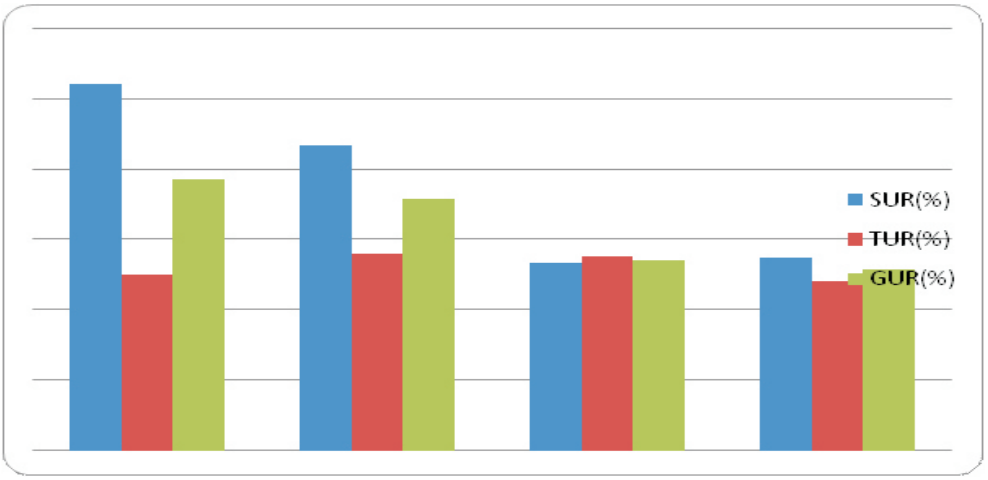

Figure 1: A bar chart showing utilization rates of physical facilities in the sampled Nigerian universities.

The bar chart in Figure 1 further depicts the utilization rates of lecture rooms, libraries, Information and Communication Technology (ICT) centres and laboratories. The bars in the chart are above 100% in lecture rooms, libraries, ICT centres and laboratories utilization. The results imply that physical resources were over utilized in the sampled institutions. Knezerich (1992) cited in Akinnubi (2010) argued that class size has a bearing on institution's performance. The continuing educational challenge for administrators working with teachers and others to improve instructional practice is to determine classroom patterns that preserve and enhance the significant differences among students. Also, Osayi (1976) claimed that schools that offer science subjects should not only have laboratory, but must equally equip them with the related science materials. Without laboratory, experimental work cannot be effectively carried out.

Research Question 2: What is the internal efficiency in Nigerian universities?

To answer this question, the total number of students in the sampled faculties between 2003/2004 and 2005/2006 were obtained to compute the wastage rate, that is, Refined Cohort Wastage Rate (RCWR) and graduation rate using equations (5) and (6) (Literature Review) as shown in Table 2.

Table 2

Wastage and graduation rates in the sampled Nigerian universities

N	Universities	Wastage Rate	Graduation rate
1	Abia State Universities	24	76
2	Adamawa State University	19	90
3	Adekunle Ajasin University	8	92
4	Ahmadu Bello University	7	94
5	Ambrose Ali University	28	78
6	Benue State University	13	95
7	Delta State University	9	99
8	Ebonyi State University	19	94
9	Imo State University	17	87
10	Kogi State University	34	80

11	Lagos State University	10	95
12	Nasarawa State University	46	63
13	University of Ado-Ekiti	29	81
14	University of Benin	11	93
15	University of Calabar	9	96
16	University of Ibadan	22	90
17	University of Ilorin	19	83
18	University of Jos	15	89
19	University of Lagos	12	95
20	University of Nigeria	13	95
21	University of Maiduguri	20	90
22	University of Port-Harcourt	12	95
23	University of Uyo	26	79

Table 2 shows the results of the analysis of wastage and graduation rates in the sampled Nigerian universities. The wastage rate was minimal at Ahmadu Bello University, where 7% was recorded. Also, Adekunle Ajasin University, Delta State University and University of Calabar had less than 10% wastage rate. Abia State University, Ambrose Ali University, Kogi State University, University of Ado–Ekiti, University of Ibadan, University of Uyo and Usman Dan Fodiyo University had above 20% wastage rate. Nasarawa State University had the highest wastage rate of 46%. The average wastage rate stood at 19%. Wastage in education happens as a result of low promotion rate, high repetition rate and high dropout rate. It presupposes that if educational managers carefully and effectively handle educational resources, better results would be achieved. Fadipe (1992) concluded that the quality of inputs always influences the outputs of the school system. The average graduation rate stood at 88% which is high enough to establish high internal efficiency in the institutions. The results imply that low wastage rate at the sampled universities resulted to high graduation rate.

Hypothesis Testing

H_0: There is no significant relationship between physical resource utilization and internal efficiency in the Nigerian universities.

Table 3

Correlation analysis of physical resource utilization and internal efficiency

Variable	N	Mean	SD	Df	Calculated r-value	Critical r-value	Decision
Physical resources utilization	2700	8.42	2.625	2698	.316	.062	Significant
Internal efficiency	2700	4.95	2.262				

Table 3 indicates that the calculated r-value (.316) is greater than the critical r–value (.062) at .05 level of significance and for 2698 degrees of freedom. The null hypothesis which states that there is no significant relationship between physical resource utilization and internal efficiency is rejected. The number of students using the institutions' physical facilities has a direct influence on students' grades at the end of the semester/ academic session, which is an indicator of internal efficiency in the institutions.

Akinsolu's (2006) results showed that schools that planned and maintained their facilities had higher students' retention and were even more effective than others. Good teaching takes place in schools with a good physical environment. Institution's curriculum cannot be sound and well operated with poor and badly managed school facilities. Adeyinka (1996) found out that effective teaching and learning could only take place in well-equipped laboratories and classrooms. Majority of the Nigerian universities today lack some essential facilities. Nte (2007) noted that educational facilities were easily identified with direct teaching functions. Also, Uwaifo (2009) submitted that effective utilization of physical resource resulted into effective teaching and learning in the Nigerian universities.

Conclusion

The available resources within the jurisdiction of the institution have a great role to play in the quality of its products in terms of students' academic performance. Effective management of school physical facilities brings about facilitation of the educational process, morale of the teachers and students, usefulness in the determination of the worth of an institution, influence on the relationship between the school and the community and the utility of school as cultural, civic, recreational and youth centre. Physical resources are the major factors contributing to internal efficiency.

Recommendations

Based on the findings of the study, the following recommendations were made:

i. The facilities available in the institutions should be improved upon in order to accommodate more students. This would, in no small measure, reduce the pressure on the existing universities' physical resource in Nigeria. Also, Nigerian universities should admit only those students that they can cater for in terms of facilities utilization so that the available facilities would not be over utilized. This would reduce incessant breakdown of these facilities.

ii. Concerted efforts should be made to reduce student wastage rate to the barest minimum by ensuring that admission is based more on merit. When admission is based more on merit, issues of student drop out and student repetition would be efficiently and effectively managed. Those admitted would be capable of facing academic challenges which would help in achieving high graduation rate and the development of the country.

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