Inadequacy of Infrastructural Facilities in Public Universities in Nigeria: Causes, Effects and Solutions

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Abstract: This paper examined the factors responsible for the inadequacies of infrastructural facilities, and their effects on the quality of education in public universities in Nigeria. The paper employed qualitative and qualitative data. The paper identified poor funding, corruption, project abandonment, poor maintenance culture, poor planning, poor participation of the private sector and poor internally generated revenue as militating factors. Poor quality of teaching and learning, poor ranking, strike actions, Brain-drain and poor research activities and impacts are also identified as effects of inadequate infrastructural facilities in public universities. Based on these problems identified, the following are recommended the government should improve the funding of public universities according to the 26% minimum percentage of the total budget of a country that was recommended by UNESCO for an effective educational system. The government should adopt public-private partnerships in the provision of infrastructural facilities like the school hostels and recreation centres etc.

Keywords: Infrastructure facilities, Public University, Shortage.

Introduction

Public universities are universities owned by the government. Public universities are universities established to provide post-secondary education for Nigerians. Public universities are universities established by an act of parliament to serve the interest of the general public. Public universities deal with the provision of teaching, research and community services (Ogunode, 2020). The objectives of the universities in Nigerian Higher education, including professional education have the following aims: the acquisition, development and inculcation of the proper value orientation for the survival of the individual and societies; the development of the intellectual capacities of individuals to understand and appreciate environment; the acquisition of both physical and intellectual skills which will enable individuals to develop into useful members of the community; the acquisition of an overview of the local and external environments (FGN, 2014). Public universities in Nigeria are grouped into federal and state-owned universities. The federal universities are owned by the federal government of Nigeria while the state universities are owned by the state government. The total numbers of federal and state public universities are 49 and 60 across the country (NUC, 2022).
The federal government of Nigeria established the National universities commission to oversee the external administration and supervision of all universities in Nigeria. The administration of public universities in Nigeria takes two dimensions: external administration and internal administration. The external administration is done through the federal ministries and other regulatory agencies in the country. The external administration handle planning, policy formulation, programme accreditation, supervision, funding and quality control of the universities. The internal administration is headed by the school administrators and other principal managers within the universities. The function of internal administration is to ensure the implementation of policies, coordinate, supervise and organize the human and materials resources of the universities to accomplish the objectives of the universities (Ogunode, 2020).

The realization of the universities' goals and objectives depends on the availability of adequate human and material resources. Ogunode & Adamu (2021) opined that higher education is designed and structured to function with human and material resources. The human resource includes the teaching and non-teaching staff. The teaching staffs are called academic staff while the materials resources include infrastructural facilities such as administrative blocks, offices, ICT facilities, libraries, laboratories, portable water, electricity, internet services, classrooms and instructional materials.

Infrastructural facilities in majorities of public universities in Nigeria are in short supply. Ebehikhalu, & Dawam, (2017) submitted that it is very clear that Nigerian universities have teaching and learning facilities that fall far short of the international best practices and Nigeria's National Minimum standard. The state of these facilities is disturbing and apart from the fact that they are grossly inadequate most of them are in a shambolic state, comatose, obsolete and out of use while many others are improvised. In short, the study found that in Nigerian universities, physical facilities for teaching and learning are inadequate, substandard, overstretched, overcrowded and most times improvised. Environments for training like this are sources for a loss of values and confidence. They demoralize and humiliate the lecturers and students. The lecturers and students are without self-esteem and the confidence to work hard for the best to drive innovations and development of the nation is discouraged.

Ebehikhalu, & Dawam, (2017) reported that universities in Nigeria portray a general lack of infrastructural facilities. An average public university in Nigeria lacks basic infrastructure like a regular water supply, electricity, and standard accommodation for students. In many instances, the toilets that serve the students are in bad shape as many do not have running water. Lecture rooms and offices are not available and where available require refurbishment. Libraries are poorly equipped and are short of modern books and equipment. Laboratory equipment is obsolete and inputs for teaching are in short supply. Roads and buildings on many campuses are in a state of disrepair. Poor and dilapidated infrastructures are the major factors that have led to the despicable state of Nigerian Universities. It is imperative to examine the causes of the shortage of facilities, its effects and pragmatic policies to address the problems posited by the inadequacy of infrastructural facilities in public universities.

**Concept of Infrastructural Facilities**

Ogunode & Agwor (2021) defined school infrastructural facilities as social capital within the school environment. They include school buildings/complexes such as classrooms, tables, exam halls, chairs, auditoria, desks, staff offices, seminar/conference/board rooms, laboratories, workshops, studios, farms, gymnasiums, central libraries, specialized/professional libraries, faculty libraries, departmental libraries, etc., Institute/centres', specialized facilities e.g. ICT infrastructure, special laboratories, conference facilities, etc., and Boards e.g. interactive, magnetic, screen and chalk, etc., ICT that is computer laboratories and services, network connectivity, multi-media system, public address system, slide, and video projectors, and Ergonomics furnishing in laboratories, libraries, and lecture rooms/theatres, moot courts, and studios, etc. Students' hostels or accommodations including Boys and Girls hostels; municipal/physical infrastructure i.e. power supply, water supply, good road networks, sports.
health and sanitation unit, staff schools, security facilities, etc. Also, Ebehihkhlu, & Dawam, (2017) submitted that University education comprises two components: inputs and outputs. Inputs constitute physical and human resources and outputs consist of the aim or goal and the outcome or result of the education. These physical resources are known as physical infrastructure which refers to basic facilities and equipment needed for the functioning of the university. The facilities include lecture theatres, auditoria, classrooms, libraries, studios, laboratories, administrative blocks, workshops, sports centres, clinics, hostels, staff quarters, toilets, cafeterias, shops etc.

In the area of the importance of facilities to the realization of goals of the universities system, Ogunode & Agwor (2021) acknowledged that it aids effective delivery of administrative functions in schools; it makes the delivery of services fast and reliable; it enables teachers to deliver lessons fast and infrastructural facilities provide a conducive working environment for both teachers and students; Infrastructural facilities enable learners to learn at ease and learn well; Infrastructural facilities enable the teachers to teach well, prepare their lessons, and deliver them online with the use of ICT or face-to-face, effectively. The importance of school infrastructural facilities in the realization of educational goals cannot be underestimated according to Ogunode & Agwor (2021). School facilities aid the delivery of the teaching and learning process in schools. The school offices provide a conducive working environment for teachers, the classrooms help the learners to learn while the school fence protects students, the teachers, and school administrators from criminals. The school plant protects the entire human resources from the sun, rain, heat cold, and snow (Ogunode & Agwor 2021).

**Factor Responsible for Shortage Adequate Infrastructural facilities in Public Universities**

There are many factors responsible for inadequate infrastructural facilities in Nigerian public universities. Some of the factors include; poor funding, corruption, project abandonment, poor maintenance culture, poor planning, poor participation of the private sector and poor internally generated revenue.

**Poor Funding**

Inadequate funding has been identified as one of the major factors contributing to the inadequacies of facilities in public universities in Nigeria (Gambo & Fasanmi, 2019; Ifeanyi, Ogunode, & Ajape 2021). This problem of shortage of funds can be traced to the poor budgetary allocation for the administration of public universities in Nigeria. The university system requires a lot of funds for the effective administration of the system. The annual budgetary allocation for the administration of universities in Nigeria is grossly inadequate. The inability of the federal government to stick to the UNESCO 26% of the national budget for education is affecting the management of Nigerian universities (Ogunode & Abubakar, 2020; Ogunode, & Onyekachi, 2021; Ogunode, & Audu 2022). The poor funding of public universities in Nigeria is responsible for the poor quality of education and the decay of infrastructural facilities. The factors responsible for inadequate funding of public universities in Nigeria include lack of political will, corruption, increase in population, inflation, fall in national revenue and poor financial planning. The implications of underfunding of public universities include; inadequate infrastructural facilities, shortage of academic staff, poor quality of education, brain-drain and strike action. Ebehihkhlu, & Dawam, (2017) argues that Nigerian universities have been grossly underfunded and the consequence of this has manifested in the deficiency of teaching and learning infrastructural facilities in the universities.

**Corruption**

Corruption in the administration of public universities is another critical factor that has contributed to the shortage of facilities in various universities across the country. Ebehihkhlu, & Dawam, (2017) argues that many of the stakeholders in the university system in Nigeria are also responsible for the rot in the university system. ASUU has struggled to force the government to properly fund the universities, but these funds are poorly managed, embezzled and stolen. This
high level of corruption is a practice common among some university administrators. The corrupt practices are similar to what is obtainable in the civil service and the political world. The symptoms of these corrupt practices are manifested in the dilapidated, very substandard and poorly delivered buildings and other infrastructure. The majority of the universities' administrators have seen their positions as an opportunity to amass wealth, caring more about how to enhance their financial wherewithal than protecting the integrity of the university system. Also, Ogunode & Josiah (2021) concluded that inadequate infrastructural facilities in many public universities in Nigeria have been linked to the high rate of corruption in the system. The money provided for infrastructural facilities is diverted and looted, leaving the universities to suffer a shortage of facilities. Priye (undated) opined that corruption began to affect education seriously in the middle and late 1980s as the psychosocial beast beclouded the minds of those who ruled Nigeria. The scramble to loot as much as possible by those in the position of power resulted in the neglect of the educational sector. Suddenly, education which was considered the cornerstone for the development and modernization of Nigeria was ignored, neglected, and starved of the funds and policy initiatives needed to move it forward. Increasingly, national and state governments started cutting educational funds, creating the impression that education was no longer an important strategic tool in directing the country's growth. With this development, the looting of educational funds became acceptable. Thus, it became fashionable to loot funds allocated for academic enhancement, capacity building, infrastructural development, modernization, and rehabilitation of educational institutions. The looting involved educational policymakers, bureaucrats in various educational ministries, and school officials responsible for administering the schools (primary schools, secondary schools and higher institutions). Ogunode, Josiah, & Ajape (2021); Godwin (2017); Ehichoya & Ogunode (2020) identified the shortage of facilities as one of the effects of corruption in the university system.

**Project Abandonment**

Project abandonment in public universities across the country has contributed to the problem of a shortage of infrastructural facilities. Ojo (2017) cited in the Daily Trust dated June 28, 2015, that the Former Director of Administration, Chartered Institute of Project Management of Nigeria, Mr David Gods-will Okoronkwo, stated that there were approximately 56,000 abandoned government projects across the country including those in educational institutions. He listed them according to geopolitical zones. In his words, “South-East has 15,000; South-West, 10,000; South-South, 11,000; North-West, 6,000; North-Central, 7,000; North-East, 5,000 and Abuja, 2,000.” All these projects were estimated at N12tn. Ojo (2017) also stated that former President Goodluck Jonathan inaugurated the 20-man Ibrahim Bunu-led Presidential Projects Assessment Committee on March 4, 2010, to among other things, take inventory of all Federal Government projects, assess the level of funding, and project status. The committee on June 2, 2011, submitted its report to the ex-President. It made an inventory of 11,886 ongoing projects (as of then) with N7.78tn estimated cost out of which the Federal Government paid N2.696tn to contractors leaving a balance of about N5tn. Volume one of the report showed that of the geopolitical zones, the South-South zone has 1,755 projects amounting to N2.1tn followed by the North-Central with N630bn with 1,844 projects. The last in ranking is the North-East zone with 466 projects amounting to N98bn. These infrastructure facilities abandoned included those sited in educational institutions like federal colleges, polytechnics, Colleges of Education and Universities. Ewa (undated) carried out a study that explored the root causes of project abandonment in Tertiary Institutions in Nigeria. The result from the study showed that the root causes of project abandonment in Tertiary Institutions in Nigeria like any other government establishment are, lack of adequate planning for the project at inception, the lack of articulated vision and objectives, lack of adequate funds and budgetary allocation before projects are embarked upon, Inefficient and effective legal system, poor contract documentation, corruption and compromises, lack of municipal services, non-release of government white papers on investigations carried out on abandonment of projects, lack of true leadership, lack of continuity in governance, and ambiguity in contract documentations. Also, Ogunode & Murtala (2022)
concluded that poor funding, corruption, inflation, fall in national revenue, insecurity, political instability, weak school administrators, poor monitoring and evaluation, poor planning and lack of continuation in government policies were the factors responsible for projects abandonment in public Universities in Nigeria.

**Poor Maintenance Culture**

The poor maintenance culture among the students, academic staff and non-academic staff of public universities in Nigeria is also linked to the problem of inadequate facilities. Students often damage facilities provided for them to study. Also, some academic staff and non-academic staff misuse some of the school facilities at their disposer. All these activities of damaging facilities within the universities have gradually reduced the number of facilities in the universities. This submission is attested to by NOUN, (2012) who submitted that lack of maintenance culture among stakeholders in institutions of higher learning is another factor reducing physical plants to nothingness. The abuse of toilet facilities, classrooms, and some other facilities in schools is worthy of mentioning here. Maintenance departments in most institutions of learning are handicapped. There are inadequate staff and tools for maintenance work. Some facilities that require minor repairs get spoilt beyond what could be repaired because of negligence.

**Poor Planning of Facilities**

Poor planning of university facilities and poor implementation of carrying capacity policies have contributed to the shortage of facilities within the universities. Many universities over-admit students over the carrying capacities and the inability of the planners to plan to cover the projected student growth in the universities has caused a shortage of facilities. Ayodele and Alabi, (2011) also argued that inadequate planning, inadequate funding/financing, inflation, the bankruptcy of contractors, variation of project scope, political factors, death of a client, incompetent project managers, wrong estimates, inadequate cost controls, faulty design and delays in payments were the causes of project abandonment and mismanagement.

**Poor Participation and partnership of the Private Sector**

Poor participation of the private sector in the provision of infrastructure facilities in public universities has contributed to a shortage of facilities in universities across the country. The provision of infrastructural facilities in the majority of public universities is singularly handled by the government. The private sector's contributions to the provision of facilities are poor due to poor community participation and corporate social responsibility. Ohiare, Udebu, Sarafadeen, & Abashi, (2022) noted that the contribution of the private sector to the funding of higher institutions in Nigeria is minimal and this is affecting the infrastructural development of higher institutions. Adedeji (2017) observed that in advanced countries private sectors contribute immensely to the development of higher education, but in Africa and Nigeria especially, the contribution of private individuals and institutions towards the development of higher education is insignificant and this is affecting the development of higher education in Nigeria.

**Poor Internally Generated Revenue**

The poor internally generated revenue of public universities in Nigeria has also contributed to the problem of shortage of facilities in most of the universities. Ohiare, Udebu, Sarafadeen, & Abashi, (2022) observed that the internally generated revenue of public higher institutions in Nigeria is small and contributes a small percentage to the total funding of the various institutions in the country. Ifeanyi, Ogunode & Ajape (2021) attested that the poor internally generated revenue of the universities in Nigeria is a fundamental reason for a shortage of funds in the universities across the country. Most public universities in Nigeria were designed and structured to depend fully on government subvention. So, universities cannot function without government funding. Ahaotu & Ogunode (2021) agreed that the implication of poorly generated revenue affects the administrators because it will be very difficult in realizing the laudable goals and development of Nigerian tertiary institutions. Due to poor internally generated revenue, many university administrators cannot embark on capital project expansion in the various universities.
Effects of Inadequate Infrastructural facilities

There are many effects of the shortage of infrastructural facilities in universities. Some of the effects include; poor quality of teaching and learning, poor ranking, strike actions, Brain-drain and poor research output and impacts.

Poor Quality of Teaching and Learning

Shortage of infrastructural facilities like laboratories, libraries, classrooms and exam halls has negative effects on the teaching and learning of students. Inadequate infrastructure facilities in public universities have affected the quality of higher education in Nigeria (Okebukola 2018; Ogunode, Jegede & Musa, 2021). Adejompo (2017) also looked at infrastructural facilities and the student's academic performance at Adekunle Ajasin University, Akungba Akoko, Ondo State, Nigeria. The paper discovered a positive relationship between the student's academic performance, power supply, and health facilities. However, the internet facilities and transportation facilities were not adequate, whereas the water supply was adequate. Adedipe (2007) concluded that inadequacy of physical resources translates to poor results or poor products while Arab et al (2013) stated that physical facilities are the compulsory components of any educational institution and research has proved that student's performance and academic achievements are correlated with better building quality, advanced laboratories, libraries and other physical facilities. Also, Salisu (2001), in her study on the influence of school physical resources on students’ academic performance, inferred that there is a significant difference in the academic performance of students in institutions with adequate facilities and those without them. The lack of good buildings or funds to rehabilitate collapsed structures poses a threat to the system’s performance and sustainability; hence, education is falling due to low standards.

Poor Ranking

The poor ranking of many public universities in Nigeria is traced to the problem of inadequate infrastructural facilities in the universities. Facilities are one of the indicators used for ranking the performance of universities. The quality of infrastructural facilities available in the universities matters and their accessibility to teachers and students also counts. Teaching and facilities go together. The quality of teaching depends on many factors such as the availability of quality infrastructural facilities. When there is a shortage of facilities it affects the quality of teaching which in most cases results in weak teaching programmes. Many public universities in Nigeria do not have modern laboratories and ICT facilities. Ogunode, Akin-Ibidiran, & Ibidiran (2022) were of the opinion that inadequate funding, weak teaching programme (poor learning environment); research programme (volume, income and reputation); citations (research influence); international outlook (staff, students and research); and industry income (knowledge transfer) are factors responsible for the poor ranking of Nigerian public Universities. Bassey, Udofia & Egbona (2009) observed that the lack of adequate infrastructure in our higher education poses a serious setback in achieving higher education goals. In an institution where there are no sufficient classrooms, resource rooms, staff rooms, laboratory facilities, computers, and the like, proper teaching and learning cannot be effective and efficient in the system.

Strike Actions

Inadequate infrastructural facilities are one of the major reasons that various unions in Nigerian public universities have embarked on strike actions. The unions have demanded the provision of adequate infrastructural facilities, better welfare packages, etc. Lawan, A. & Ogunode (2021) stated that among the factors responsible for brain drain are the continuous strike actions common in the higher institutions in Nigeria. Okoli, Ogboniah & Ewor, (2016) noted that it has become a known fact that students across various universities in Nigeria are constantly faced with industrial actions embarked upon by the Academic and Non-Academic Staff Unions of various institutions. The disagreement or lack of understanding between government and unions arising from non-implementation of the agreement reached, often results in a deadlock that usually disrupts the academic calendar. As academic activities are suspended for a long period,
the student's reading abilities fell. Even the previous knowledge acquired is even forgotten by some students. This mostly turns some students into certificate seekers than knowledge seekers. Afolabi & Ogunode (2021) observed that Nigerian higher institutions are known for various strike actions embarked upon by different union groups as a result of the failure of the government to implement some agreements signed to be implemented by the government. The result of strike action on educational institutions is a disruption in an academic programme and it becomes a natural consequence of each industrial action or strikes.

**Brain-drain**

Brain drain refers to the movement of professionals from developing countries to developed countries for better job offers. Brain drain is a situation whereby professional individuals are migrating from their countries to another country to seek greener pastures. Many lecturers and researchers are leaving public universities in Nigeria for other parts of African countries and Europe for better job offers and more conducive working environments with developed infrastructures. One (2000) concluded that many experienced and young lecturers are fleeing Nigeria from the frustration of university life into more rewarding and more challenging sectors of the economy and even to overseas countries. Also, Adesina (2008) submitted that the immediate effect of a shortage of facilities, and depressing working conditions in university is mass resignation, departure of hard-working colleagues to North America, Western Europe, the Middle East and even to African Countries with less buoyant economies than oil-rich Nigeria. Most lecturers are completely disillusioned with the gross neglect of successive governments of the educational sector and the government's hard-line posture toward their legitimate demands. They cannot plan their schedule such as the period to proceed on sabbatical leaves. Factors responsible for Brain-drain in Nigerian public universities according to Ogunode (2020) include poor motivation, an unconducive working environment, insecurity, underfunding and political interferences. The implication of brain drain in Nigerian public universities includes; a shortage of lecturers, poor quality of education and a high student-teacher ratio.

**Poor Research**

Inadequate infrastructural facilities are another big problem preventing research development in Nigerian public universities. Paul (2015) observed that research infrastructure in institutions of higher learning is grossly inadequate and weak. There is a dearth of modern equipment, the old ones when available, are no longer serviceable because the manufacturers have long fazed them out of their production lines. Workshops, libraries, and laboratories are ill-equipped and obsolete, educational facilities are difficult to replace if not impossible. All these hinder research activities and findings. Ebehikhalu & Dawam (2017) submitted that most of the laboratory furnishings are dilapidated and relevant equipment is lacking. The available ones are not functional and obsolete. Sometimes, the laboratories double as lecture rooms. The library is not conducive to learning. The provision of ventilation is very poor with inadequate lighting, overcrowded and stuffy. At some campuses, there was only one central, inadequately equipped engineering workshop for eight programmes.

**Conclusion and Recommendations**

This paper discussed the factors responsible for the inadequacies of infrastructural facilities, and their effects on the quality of education in public universities in Nigeria. The paper concludes that poor funding, corruption, project abandonment, poor maintenance culture, poor planning, poor participation of the private sector and poor internally generated revenue are some of the mitigating factors. The paper also identified poor quality of teaching and learning, poor ranking, strike actions, Brain-drain and poor research are effects of inadequate infrastructural facilities in public universities. Based on these problems identified, the following are recommended:

A. the government should improve the funding of public universities. The minimum percentage of the total budget of a country that was recommended by UNESCO for an effective educational system is 26%, this should be implemented by the government at every level;
B. The government should adopt public-private partnerships in the provision of infrastructural facilities. The hostels and recreation centres can be handover to a public-private partnership organization for effective management and development.

C. The government should design infrastructural facility plans for all the public universities in Nigeria,

D. University administrators should seek the support of the private sector in the provision of infrastructural development. Philanthropists, corporate bodies, non-governmental organizations, and alumni associations should assist universities in providing infrastructural facilities to aid effective teaching and learning activities.

E. University management should ensure that infrastructural facilities in their schools are maintained. There is a need to take a serious look at the maintenance culture, which is lacking in Nigeria, as this will go a long way to reduce the rate of decay of the existing facilities.

F. The government should monitor all funds released for infrastructural development in all public universities to curb corruption and misappropriation of the funds.

References


