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Research Development in Public Universities in Nigeria: Problems and Solutions

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Abstract: This paper discussed barriers to research development in Nigerian public universities. Secondary data were used to support the points raised in the article. The secondary data were sourced from print materials and online publications by recognized institutions and individual authors. The paper concluded that Poor funding, lack of modern laboratories, inadequate infrastructure facilities, strike actions, insecurity, brain drain, the poor linkages between researchers and the industrial sector, unattractive working conditions for researchers, strict guidelines for accessing grants and poor mentorship are some of the barriers to research development in public universities in Nigeria. To solve the identified problems, the paper among other things recommended adequate funding of public universities with a special interest in research development in all the public universities in Nigeria.

Keywords: Public, Development, Barriers, Universities, Research.

Introduction

Research is the process of arriving at dependable solutions to problems through a planned and systematic collection, analysis and interpretation of data. Research is oriented towards discovering the relationships that exist among the phenomena of the world in which we live (Osuala, 2001). Okeke (2004) noted that research is an activity that involves observation and description of the characteristic properties of objects or events to discover relationships between variables and develop generalizations that may be used to predict future occurrences. Research involves the identification of problems, gathering of new data, and finding the solution to a problem through carefully designed procedures and logical analysis. The research, therefore, is an intensive and extensive search for solutions to problems in society. The problem could be in education, business, politics, etc.

Research is a way of thinking: examining critically the various aspects of your day-to-day work; understanding and formulating guiding principles that govern a procedure; and developing and, testing new theories that contribute to the advancement of your practice and profession. It is a habit of questioning what you do, and a systematic examination of clinical observations to explain and find answers for what you perceive, intending to institute appropriate changes for more effective professional service (Kumar, 2016). According to Ajoku (2006), research is the search for knowledge, truth, similarities and relationships, and the process of finding solutions to problems through the systematic collection, analysis and interpretation of data. Ahiakwo (2003) observed educational research as a diligent and systematic attempt to provide plausible answers to educational problems through the process of logically designed operations or steps. It is a systematic and scholarly application of the scientific method, to the solution of educational problems (Osuala, 2004).

Osagie, (2012) opines that recent advancements in information, transportation, and space technology in advanced countries are the fruits of painstaking research in the past several decades. Hence, universities in Nigeria should make research and development their top priorities. What makes a university unique is the special service it provides for its immediate community. Such specialized services are derived from the results of research it conducts. Universities have made important contributions to the growth and development of nations through research. By producing graduates with new and current ideas, universities make important contributions towards creating innovations for the growth and development of industries and government businesses, thereby promoting wealth and development (Okebukola, 2004). Universities also support knowledge-driven economic growth strategies and poverty reduction by generating new knowledge, building the capacity to access existing stores of global knowledge and adapting that knowledge for local use. Technical innovations and their diffusion lead to higher productivity; most innovations are products of basic and applied research undertaken in universities. Progress in agriculture, health, environmental sectors, sciences, engineering and technology is heavily dependent on the application of such innovations (Osagie, 2012).

The research programme of the universities is one of the indicators used for ranking universities and grading their performance (Ajoku, 2006; Olatunde-Aiyedun, & Ogunode, 2021; Olayinka, 2018). Ogunode & Abubakar (2020) noted that research is the second cardinal programme of higher institutions. Research is very important to the development of society. Research is conducted mostly in the higher institutions' environment to solve problems affecting society. The academic staff is saddled with the responsibilities of carrying out research in universities. Conducting research is one criterion for measuring their performance. Paul (2015) pointed out that the conduction of research is one of the basic functions of tertiary institutions, (Universities, Polytechnics, Mono-technics and Colleges of Education). The academic staff of these institutions are compulsorily required to carry out research activities as their promotions and progressions are primarily based on their research outputs. Apart from the academic staff being promoted through research publications, research activities enhance their credibility, and status, and also add value both to their immediate community and the larger global community. Yusuf (2012) concludes that the role of higher education research in national development cannot be overemphasized. However, researches in Nigerian institutions of higher learning are yet to make a real impact on the technological advancement of the country and the socio-economic well-being of its citizenry. The achievement of the aims of research programmes in Nigerian public universities depends on the effective administration of research programmes. Research conducted in universities can take different forms. Yusuf (2012) submits that universities' research can take diverse forms such as:

- (i) **Individual Research:** This is initiated and conducted by an individual researcher or a team of researchers who may seek funding from the University Board of Research (UBR) or alternative funding agencies, including international organizations, non-governmental organizations (NGOs) and private organizations.
- (ii) **Institutional Research:** This is initiated and supervised by the institution or a unit of the institution (faculty, department and so on) and usually involves a team of researchers. Funding is internal, except where assistance is obtained from external sources.
- (iii) **Commissioned or Contractual Research:** This is carried out at the instance of an external body (government or government organ, the private sector, NGOs etc.) which also funds the research. The sponsor of the research has the right to ownership of the research results.
- (iv) **Collaborative Research:** This is a joint research effort with common objectives or goals and involves the sharing of ideas, methodologies, and facilities between individual researchers or research teams, from the same or different institutions, organizations, countries or regions of the world.

(v) **Student Research:** This is an undergraduate or postgraduate research project undertaken by a student, supervised by a researcher in the student's department, and the results of which are reported in the student's thesis or dissertation. Student research is usually jointly funded between the student himself (and /or his sponsor) and his department.

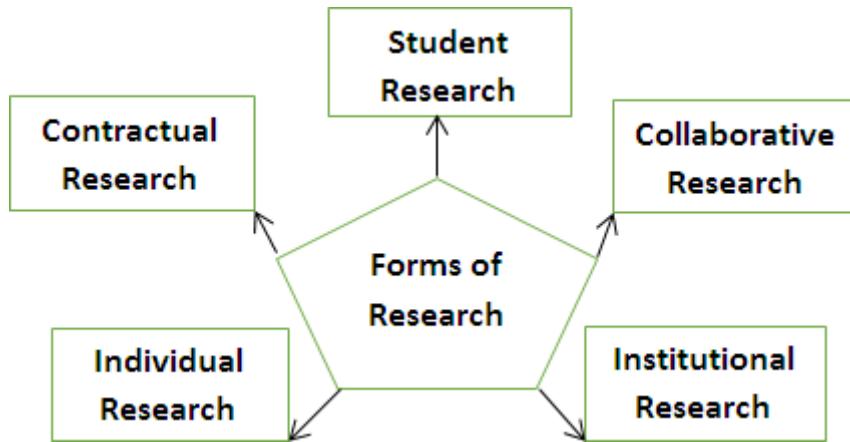


Figure 1: Forms of Research Conduct

Source: Somadina, Ayo & Ayoko (2023).

Importance of Conducting Research in Universities

According to Paul (2015), the following are the importance of conducting research:

Quantitative Education

Quantitative education that acquires useful skills, desirable values, knowledge, attitudes, ideas and competencies necessary for self-reliance can only be possible through adequate research work. It also results in qualitative instruction and articulate and confident graduates for society's developmental activities. The quality of the citizens of a country depends on the quality of their education. When research work leads to quality education, the desired personnel required to serve in the various sectors of the economy is guaranteed (Paul, 2015).

Liberation from Ignorance and Poverty

Research activities and findings liberate man from poverty and ignorance. Research findings can liberate man from the restraints and limitations of ignorance and dependency through exposure. Ignorance and illiteracy are serious leading causes of socioeconomic retrogression and poverty in the countries of the world, including Nigeria. The advanced countries of the world like Japan, America, etc, are flourishing economically because of their exposure to research. We opined they are advanced because of the progress they have made in the various fields of human endeavours. No nation in the world has ever thrived on the wings of illiteracy. Adequate research leads to the discovery of new techniques, ideas and ways of doing things which will, in turn, lead to wealth creation (Paul, 2015).

Improvement in Standard of Living

Worthwhile research findings transform society positively and also improve the overall quality of life. Without research, old knowledge will only be recycled and at a point will become anachronistic. It is important then that research work should show the novelty of ideas and not repetitive but reproductive to have an impact on the life of the society. The variety of results that come from the research will expose facts, provide evidence, discover the unknown and ultimately, expand the frontier of knowledge in the different areas of studies (Paul, 2015; Emunemu, 2009). All these will improve the standard of living, increase chances of employment, paving the way for economic opportunities and upward social mobility.

Provision of Solutions to Counterparty Problems

When researchers effectively embark upon and complete research designed to understand and explain various aspects of society or nature, there will be solutions to the social and natural problems that impinge on human well-being in the immediate environment and globally (Ajayi, 2009). Take for instance, the nation can benefit from research findings or discoveries that will provide solutions to some naughty issues like climate change, HIV/AIDS and other related health problems. Through scientific explorations, means of curing myriads of terribly devastating sicknesses and diseases can be discovered and reduce the mortality rates (Paul, 2015).

Improvement in Educational Practices

Through research, relevant strategies and methods of learning and teaching new concepts can be learnt from other nations and adapted to improve instructional effectiveness. A lot of changes have taken place in teaching situations today, and many more will still take place as long as educational research is being conducted. Educational research is an academic endeavour which is geared towards finding novel ways to improve the approaches used in providing educational activities in the school system (Ayodele-Bamisaiye, 2005). Educational research is also conducted to develop alternative approaches in the professional practice of education to the personality of the learners (Paul, 2015).

Research Funding in Nigeria

Research funding is critical to the ability of tertiary institutions to conduct research in the first place and ultimately to the quality and impact of this research. Most research activities in Nigeria are sponsored by the government through government funding agencies like the National Science and Technology Fund (NSTF), the Education Trust Fund (ETF) etc, as well as several federal/state ministries, boards and parastatals which directly fund researching institutions or research projects under them. In addition, research projects are occasionally funded by international and philanthropic organisations by way of sponsored research support, endowment funds, foreign aid, fellowships, donations, etc. Unfortunately, there is virtually no industry involvement in funding academic research in Nigeria (Yusuf, 2012; Donwa, 2006).

Research in federal universities, polytechnics and colleges of education is routinely funded through the relevant supervisory bodies namely, the National Universities Commission (NUC), the National Board for Technical Education (NBTE) and the National Commission for Colleges of Education (NCCE) respectively. It must be said though; the funding of research in these institutions has been generally poor and irregular. However, the federal institutions of higher learning are better funded and more autonomous than the state government-owned institutions (Yusuf, 2012; Clark & Sedgwick, 2004).

In Nigeria, the traditional funding method for higher education research is funding formula based on inputs, such as staff size, enrolment etc. (Yusuf, 2012; Salami & Hauptman, 2006). However, given the expenditure dynamics of higher education research against scarce state resources in a dwindling global economy, many countries around the world are now adopting the innovative, performance-based funding mechanism based among others on peer-reviewed outputs or outcomes, rather than inputs (Yusuf, 2012; Akintoye, 2008; OECD, 2010).

The research programme is one of the cardinal programmes in Nigerian universities. Research programmes in Nigerian universities are designed for the advancement of technology and to solve pressing problems in the country. Researchers in public universities are faced with a lot of problems. It's important to examine the barriers to research development in Nigerian universities.

Barriers to Research Development in Public Universities in Nigeria

Poor funding, lack of modern laboratories, inadequate infrastructure facilities, strike actions, insecurity, brain-drain, the poor linkage between researchers and the industrial sector,

unattractive working conditions for researchers, strict guidelines for accessing grants and poor mentorship.

Poor Funding

Poor funding is among the factors responsible for the underdevelopment of research programmes in Nigerian universities. Yusuf (2012) observes that in federal universities, routine funding from budgetary allocations is channelled through the NUC, which then disburses the funds to the University Boards of Research at the institutional level. However, research votes from the NUC were not disbursed regularly, and when disbursed, were often grossly inadequate to cater for the research needs of a large number of public universities in the country. Massive increases in enrolment in the universities by the year have overwhelmed the government's capacity to maintain proportional financial support for research and other services. This has created funding shortfalls. Also, Chikwe, Ogidi, & Nwachukwu, (2015) argue that research efforts in education and other sectors of the economy hardly attract adequate government funding. There is a general lack of commitment by the government at all levels to the effect that researchers are not given adequate financial support. Research carried out by professionals and associations is usually frustrated due to a lack of funds. The annual government budget for education is not adequate, let alone the provision of research grants to researchers and research institutes. This has negatively affected the development of human capital in Nigeria. Fawole, Egbokhare; Itiola, Odejide, & Olayinka (2006); Donwa (2006); Paul (2015); Ogunode & Odanwu, (2023); Ogunode, & Emmanuel (2023); Ogunode, Onaolapo, Adeosun, & Ayoko, (2023); and Ogunode & Abubakar (2023) concluded that public universities are underfunded. Ifeanyi, Ogunode & Ajape, (2021); Ogunode, Abubakar, & Ajape (2021); Ogunode, Olaoye & Yakubu (2023) and Ogunode, Onyekachi & Ayoko, (2023) outlined factors responsible for poor funding of tertiary education in Nigeria to include; insecurity challenges, poor implementation of national policy on education funding, poor planning, debt servicing, subsidy payment, fall in national revenue and corruption.

Lack of Modern Laboratories

Many public universities in Nigeria do not have modern laboratories to carry out highly intensive research. This submission is acknowledged by Okwelogu, Aibe & Ogunode, (2023) who noted that science academics in Nigerian public universities are faced with the problems of a lack of modern laboratories to conduct research and implement teaching programmes. Most public universities spread across the countries do not have modern laboratories where advanced research can be carried out. This has put stress on many science academics working in various public universities. Though some newly established universities have modern laboratories while many others don't. Ebehikhalu & Dawam (2017) concluded in their studies that most of the laboratories are dilapidated and relevant equipment is lacking and where they are available, inadequate equipment makes them non-functional and obsolete. Sometimes, the laboratories double as lecture rooms which are not conducive to teaching and learning. In the words of Ebehikhalu & Dawam (2017), "the provision of ventilation is very poor with inadequate lighting, overcrowded and stuffy. At the main campus, there was only one central, inadequately equipped engineering workshop for eight programmes". Ezechi, & Ogbu, (2017) point out that the majority of Nigerian schools lack laboratory spaces, and those who have spaces lack the equipment and necessary infrastructure for proper teaching and learning of science. Science, therefore, is not a miracle where something happens out of nothing.

Inadequate Infrastructure Facilities

The shortage of infrastructure facilities in public universities has affected the development of research programmes in the universities. Many public universities in Nigeria do not have modern laboratories where extensive research can be conducted and analyzed. Yusuf (2012) states that many believe that Nigeria's institutions of higher learning are very much left behind in the area of research and innovation. For instance, they need to collaborate with their research efforts both

domestically and on the international scene but lack facilities for collaborative research. Also, Chikwe, et al (2015) point out that in Nigeria, the necessary equipment, facilities and materials needed for meaningful research are either lacking or grossly inadequate. This is particularly the case in sciences where teachers and lecturers complain seriously about the lack of science equipment to carry out their experiments. This has contributed to low human capital development in the sciences which is the bedrock of any technological advancement of any country. Also, current journals, periodicals and textbooks are difficult to get in libraries. Nwakpa (2015) note that research infrastructure in institutions of higher learning is grossly inadequate and generally weak. There is a dearth of modern equipment for research. The old ones, when available, are no longer serviceable because the manufacturers have long phased them out of their production lines. Workshops, libraries, and laboratories are ill-equipped and obsolete educational facilities are difficult to replace if not impossible. These hinder research activities and progress. Enogholase, (2013); Ebehikhalu & Dawam (2017) conclude that most laboratory furnishings are dilapidated and relevant equipment is lacking. The available, though inadequate equipment is not functional and obsolete. Sometimes, the laboratories double as lecture rooms and some of the libraries are not conducive to learning. The provision of ventilation is very poor with inadequate lighting, overcrowded and stuffy (Ogunode, 2023 and Ogunode, Ohibime, & Jegede, 2023). The factors responsible for inadequate infrastructure facilities in Nigerian public universities according include underfunding, increase in students population, corruption, poor planning of infrastructural facilities, poor supervision and inflation (Ogunode, Atobauka, & Ayoko, 2023; Ogunode & Jegede, 2021) and the implications of inadequate infrastructure facilities in Nigerian public universities according to Ogunode, & Ayoko,(2023) and Ishaya & Ogunode, (2021) include poor quality of education, poor teaching and learning, low productivity, brain-drain and overcrowding of lecture halls.

Strike Actions

Strike action by different union groups in the public universities in Nigeria is a very enormous challenge facing the administration of research programmes in the universities. We know Nigerian public universities for strike actions. The refusal of the federal government to implement the agreement reached with the different union groups in the universities led to incessant strike actions. Ogunode & Abubakar (2020) asserted that another challenge facing Nigerian higher institutions is the problem of an unstable academic calendar. The various unions and groups within the schools also contributed to the unstable academic calendar (Ogunode, Ugochukwu & Jegede, 2022). They often embarked on strike action because of disagreement with the government on welfare issues. The strike actions always disrupt the academic programme of the schools, causing more cost and prolonging student programmes. Strike actions in the tertiary institutions of learning have constituted a serious threat to effective learning. All the tertiary institutions witnessed a strike action in 2009. Non-accreditation of some programmes in our tertiary institutions is another major factor in the quality of instruction (Lawan, & Ogunode 2021).

Insecurity Challenges

Ogunode, Jegede, Adah, Audu, & Ajape (2021b) observed that insecurity is a major problem affecting the administration of research programmes in Nigerian public universities. Many research programmes in Nigerian public universities have been put to hold or stopped, especially in the universities in the Northern part of Nigeria because of the insecurity challenges leading to the forced closedown of universities (Ogunode & Ade 2023). Ogunode & Abubakar (2020) noted that the insecurity challenges facing the country are another challenge preventing effective administration and management of higher institutions in Nigeria. The insurgent in the Northern part of Nigeria has attacked many higher institutions disrupting their academic programme, killing students and destroying infrastructural facilities meant for teaching and learning. Insecurity in Nigeria and the Northeast has done more damage to the educational infrastructural facilities. The insurgency has destroyed many school facilities from basic to higher education.

Insecurity has contributed to the poor deployment of ICT facilities and administration in the various educational institutions in the northern part of Nigeria. The insurgent kidnapped some lecturers and researchers on their way to survey an oil site in Borno state. A local media reported that lecturers were kidnapped by the Islamist militant group while on an oil exploration trip to Magumeri, in the Northeastern Borno State in July 2017, while the police officers were kidnapped in a raid on a convoy. BB-www. project topics (undated) concluded that the insecurity problem is another big problem affecting the development of research programmes in Nigerian public universities. Researchers' inability to move freely within the country while carrying out research affects many researchers in Nigeria. When you couple insecurity with the unavailability of published works from academic institutions, non-governmental organizations, government agencies, and many more, one understands the magnitude of the problems facing a researcher in Nigeria(BB-www. project topics.).

Brain-drain

Brain drain in the Nigerian university system has affected the advancement of the research programme in Nigeria (Ogunode & Ade, 2023; Ogunode & Olaitan, 2023). Ogunode & Abubakar (2020) defined brain drain as the massive movement of professionals from developing countries to developed countries to work because of better working conditions. This brain drain problem has affected many higher institutions in the country, with many universities losing their professors to foreign universities. The massive movement of these lecturers is causing a major lecturer gap in Nigerian universities and their research programmes. Odetunde (2004) concluded that there was a mass exodus of many brilliant lecturers to the business world and others left Nigeria for better services. Yusuf (2012) observed that brain drain is one of the major constraints hampering the realization of research goals in the higher education sector. Akindutire (2004) observe that institutional deterioration and salary erosion during the past decade have prompted substantial academic brain-drain and impeded recruitment of new staff. Ogunode (2020) identified factors responsible for the brain drain in Nigerian public universities to include; poor motivation, unconducive working environment, insecurity, underfunding, political interferences and implications of brain-drain in the Nigerian public universities to also include; shortage of lecturers, poor quality of education and high student-teacher ratio.

The poor linkage between Researchers and Industrial Sector

The poor relationship between research institutes and industries in Nigeria has affected the development of the research output or outcome of various research institutes (Ogunode, 2023). Among the issues aggravating the inadequate funding of research institutes in Nigeria is the lack of collaboration between the research institutes and the private sector/industries. About 74% of research institutes in Nigeria have no international collaborators, and 61 have no regional or national collaborators (Ragasa *et al.*, 2010). Ikwuakor & Akunna (2022) pointed out that industry/business support of research in Nigerian universities is relatively non-existent, compared with the level of partnership between industry/business and universities in developed countries. The oil and gas industry, however, is an exception, as it provides support in the form of technical workshops, buildings, vehicles, computer hardware and software to affiliated departments of Nigerian universities. But the oil industry can do better by sponsoring and facilitating intentional and strategic research projects that will develop local technologies.

Unattractive Working Conditions for Researchers

An unconducive environment has hindered effective research programmes in majorities of public universities in Nigeria. Ogunode *et al.* (2021) stated that the lack of a conducive working environment is another factor preventing the effective administration and development of research programmes in Nigerian public universities. The Nigerian public university's environment is not conducive to conducting research. There is a problem of lack of research infrastructural facilities like access to constant power supply, internet services and gas supply. Chikwe, *et al* (2015) pointed out that the pitiable conditions under which research workers

operate are another problem that militates against research development in Nigeria. Research workers are not well paid and they lack incentives on the job. Both those who reside in official government quarters and those that live inside the town are faced with a catalogue of problems ranging from a shortage of water supply, epileptic power supply, and poor transportation system to family problems. All these problems serve as potent sources of distractions to the best brains. Given these problems, the research worker in Nigeria will not be able to perform as well as their counterparts in developed countries where the conditions are very conducive to research work. Ukwuije (2003), and Amadi (2003) also identify illiteracy, the attitude of the government, individuals and significant others towards research findings, the secrecy of information, and the scarcity of records, as problems of research in Nigeria.

Strict Guidelines for Accessing Grants

Ogunode & Ade (2023) and Ohaeri, Olayinka & Ogunode (2023) argues that another problem that has hindered the development of research programme in Nigerian tertiary institutions, especially the universities is the poor access to research grant due to strict guidelines by both local and international institutions sponsoring researches in the institutions. Okujagu (1998) asserts that research in Nigerian universities is not well funded to have the impact it should and this constitutes a serious constraint to accessing research grants by academic staff. Also indicated as a constraint to assessing research funds are the stringent conditions attached to research grants. Thus, this challenge probably accounts for some lecturers' lack of interest in accessing research funds. Charles *et al.* (2009) reveal that the majority of academic staff do not benefit from research grants for several years because of inadequate funding of research generally and stringent conditions attached to research grants. Babalola, (2014) carried out a study on underfunding of Research in Nigeria and discovered that one of the challenges to research development in research institutes and universities is the poor access to grants as a result of strict conditions attached to sponsoring the research.

Poor Mentorship

Ogunode & Ade (2023) observed that mentorship is very important in the development and sustainability of research programmes in the universities and it helps to preserve the culture and value of research in the universities. Mentorship provides a platform for young researchers to grow in the research profession. However, poor mentorship in the Nigerian university system has affected the development of research programmes in various institutions. The relationship between the experienced researchers and the young researchers is not as cordial as before due to many barriers that have crept in to create the gap that is now visible. According to Okebukola (2002), brain drain can be attributed as one of the main reasons for the diminishing scope of mentoring of junior researchers by seasoned and senior researchers. Also, Ola (2012) acknowledge that many experienced and young lecturers do not see the need in mentoring junior lecturers and this has affected the quality of research programme in the universities.

Conclusion and Recommendations

Research is one of the cardinal programmes of the universities. It is a global university culture. Universities carry out research to advance the socio-economic and technological development of society. This paper examined the barriers to research development in public universities in Nigeria. The paper concluded that poor funding, lack of modern laboratories, inadequate infrastructure facilities, strike actions, insecurity, brain drain, the poor linkage between researchers and the industrial sector, unattractive working conditions for researchers, strict guidelines for accessing grants and poor mentorship. Given the above, the paper hereby recommended the following;

1. The government should increase the funding of public universities in the country. This will enable public universities to carry out capital-intensive research;

2. Adequate infrastructure facilities should be provided in all the public universities like modern laboratories, stable power supply, stable internet services and adequate information communication technology facilities.
3. To ensure a stable academic calendar in public universities, the government should direct National Universities Commission to harmonize the calendar of public universities and implement all agreements reached with different unions groups in the universities to avoid strike actions;
4. Universities administrators and managers in Public universities in Nigeria should develop a programme for the mentorship of young researchers and academics. This will help to develop the competency needed to carry out research programmes in the universities;
5. The school management team should collaborate with various security agencies in the country to ensure security in the various school environments;
6. The government should invite the private sector to participate in research development in the universities. The private sector and non-governmental organizations have a lot to contribute to the development of research in Nigerian higher institutions. Also, public universities should collaborate with industries and companies to carry out research for them. There is a need for a collaborative effort from the government, corporate organizations, and international organizations to aid researchers' work through regular training and financial assistance.
7. The government should motivate researchers in public universities by increasing their salaries and providing a conducive working environment for them. This will help to prevent brain-drain in the system.
8. There is a need for government agencies and other international organizations sponsoring research in Nigerian universities to relax their tight policies and condition on research grant provisions. This will help many researchers access the grants.
9. The government should provide a conducive research environment by making the right policies and implementing them. Public institutions established to support and carry out research in the country should be strengthened to be more effective.

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