

Academic Brain-Drain and its Effect on Sustainability of Higher Education: A Case Study of Selected Public Tertiary Institutions in Ogun State

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Abstract: The study investigated the effect of Academic Brain-Drain on sustainability of higher education in Public Tertiary Institutions in Ogun State, Nigeria. The target population for the study was the entire academic staff members of the selected Public Tertiary Institutions from three (3) Senatorial Districts in the State which consisted of 2058 Academic Staff members. The study selected a sample of 450 Academic Staff members through the use of purposive sampling technique. Cross-sectional survey was employed for the study to retrieve the expected data through a structured questionnaire. Descriptive statistics with the aid of tables were utilised to summarize the data obtained while multiple regression analysis was adopted for inferential purpose using SPSS version 26. Component factor analysis and Cronbach Alpha statistics were used to examine the validity and reliability of the instruments which yielded 80% and .767 respectively. The study found that Academic Brain Drain has a positive significant effect on Sustainability of Higher Education as emphasized by the t-statistic {f (3/446), $t = 389.344$, $P < 0.05$ }. According to the model summary, $R^2 = .803$ suggests that the three factors: Poor Working Condition, Poor Pay Package and Inadequate Research Facilities together accounted for more than 80% of the variance in Sustainability of Higher Education. The study concluded that sustainability of higher education and Academic Brain-Drain have a strong, favorable, and significant relationship. The study recommended that good working conditions and better pay package be provided in public institutions in order to motivate the Academic Staff members and discourage them from migrating to where greener pasture can be found.

Keywords: Academic, Brain-Drain, Working Condition, Pay, Research Facilities and Migration

I. Introduction

Over the years, Nigeria has lost skilled personnel with capacity of transforming the economy through the wealth of knowledge in their disposal to developed countries. A good number of her citizens continue to migrate out of the country unabated (Adesote & Osunkoya, 2018). It is ironical that while we remain in the pit of poverty, our talented and trained, educated citizens are enriching other countries in a phenomenon called brain drain. Virtually, every sector of Nigeria economy has witnessed the loss of quality human resource to Europe and America (Professors and Lecturers, Scientists, Doctors, Nurses, Engineers, Economists, Technologists and a host of others). Ehichoya and Ogunode (2020) observe that a large number of seasoned academic staff members, particularly professors have been leaving Nigerian higher institutions for industrialized nations like the United States, Germany, the United Kingdom, and others in search of better opportunities. Academia like any other industry requires critical manpower to efficiently carry out teaching, research and community development.

In several economic areas, particularly the education sector, Nigeria suffers from a substantial brain drain. Nigerian higher education institutions are confronted with a significant issue of brain drain. Academic staff compare themselves with their counterparts in other higher institutions of learning in and outside their domain and take a decision to leave the institution they are employed for preferably higher institution of learning outside their countries where high skilled academic staff are not toyed with (Okafor & Chimereze, 2020; Ogunode, 2020). Brain-drain phenomenon, according to Akinwale and George (2022) explains why a large number of professionals and experts are migrating from developing to developed countries in search of better career opportunities. A phenomenon known as "brain-drain" occurs when experts leave their home countries in quest of long-term, high-quality employment opportunities abroad.

In the opinion of Dakuku (2022), factors such as poor working condition, poor pay package and inadequate research facilities among others contribute to brain-drain in Nigerian Public Tertiary Institutions. Although, several opinions have been raised on the factors causing brain-drain (Ogunode, Jegede & Musa, 2021; Adesote & Osunkoya, 2018; Dakuku, 2022; Anetoh & Onwudinjo, 2020). However, far less attention has been paid to implication of academic brain drain on Nigerian Public Tertiary Institutions. Against this backdrop, this study aimed to deepen our knowledge of how academic brain drain affects the sustainability of higher education in Nigerian public tertiary institutions in general and specifically to unveil the effect of poor working condition, poor pay package and inadequate research facilities on the sustainability of teaching and learning in Nigerian Public Tertiary Institutions

These hypotheses were formulated for the study:

H0₁: Poor working condition of lecturers has no significant effect on sustainability of teaching and learning in public tertiary institutions in Nigeria.

H0₂: Poor pay package of lecturers does not significantly affect the sustainability of teaching and learning in public tertiary institutions in Nigeria.

H0₃: Inadequate research facilities has no significant effect on sustainability of teaching and learning in public tertiary institutions in Nigeria.

II. Literature Review

Poor Working Conditions

When making decisions about career mobility, working conditions are a major factor. The working conditions and policies attached to employment in the Nigerian higher institutions is not attractive and this is responsible for the academic brain drain in the institutions. Circumstances that impede the complete use of professional abilities do in fact promote the choice to relocate in pursuit of more favorable roles and establishments. Ogunode, Jegede and Abubakar (2021) opined that Nigerian academic staff is among the poorly motivated in the world. Musa (2018) lamented that the working condition and policies on access to grant, training, students-lecturers, promotion, leaves and allowances for the Nigerian academic staff is poor and not always been implemented as stated on the employment letter. Ogunode, Jegede, Adah and Audu (2020) cited Charles, Ijeoma and John who carried out a study and discovered that a greater percentage of lecturers, 246 (76.35%), had not benefited from research grants for many years.

According to Chandrasekar cited in Shammout (2021), unfavorable and dangerous working conditions such as inadequate lighting, inadequate ventilation, excessive noise, poor air quality, and unsuitable temperature have a negative impact on workers' productivity and jeopardize their mental and physical well-being. Most Nigerian higher education institutions lack an environment that makes it possible to provide services effectively. Working policies, administrative snags, leadership, and the standard of auxiliary services like internet access, lighting, and academic freedom are not conducive to encouraging professionals to stick around and advance their careers. Numerous academic and non-academic staff members are quitting Nigeria's higher education institutions due to the unfavorable working conditions in many of the institutions thereby causing adverse effect on sustainability of teaching and learning in these institutions.

Poor Pay Package

Poor pay package is another fundamental factor causing brain drain in Nigerian higher institutions. Different levels of Brain Drain have been produced by inadequate compensation. The salaries of lecturers working in Nigerian higher institutions are very poor. Poor salary is one of the key cause of brain-drain problem in the Nigerian higher institutions. The monthly salaries that academic staff are receiving is less compare to what other academic staff are been paid in other countries across the World. Ogunode (2020) submitted that Nigerian lecturers are poorly motivated financially and this is affecting their performance and equally causing them to look for greener pasture abroad. Extremely skilled and seasoned Nigerian lecturers are leaving the country in search of better chances due to poor pay and inadequate benefits packages. Nigerian professors are leaving in large numbers for other nations where appreciation for education and education professionals is higher. Migration of these skilled and seasoned Nigerian lecturers abroad creates vacuum in the higher institution they leavean teaching and learning is adversely affected in their home country.

Inadequate Research Facilities

One of the cardinal programme and core functions of the academic staff is carrying out research. Over the world, lecturers are known for carrying out research frequently, it is unfortunate that academic staff of many Nigerian higher institutions are not carrying out research due to poor funding of research programme. This is confirmed by Okoli, Ogbondah, and Ewor (2016) who affirmed the poor attitude of governments towards research and inadequate funding of research programs. Any nation's progress is said to depend heavily on research. It is the cornerstone of all global sustainable development (Fayomi, Okokpuije & Mfon, 2018).

In ideal situations, one of the roles of a higher education institution is to act as a research center. Thus, it is expected of academic professionals to do study in order to identify solutions for the problems the nation faces. Education and research provide answers to problems that countries encounter with their sustainability (Ibrahim, 2017). Nonetheless, research in Nigerian higher education remains at the same level as in developed and emerging nations. For research to be conducted successfully and meet its goals, funding is required. But due to a few issues such as poor funding, inadequate facilities and corruption, research in Nigeria's higher education institutions is not promising. Nigerian higher education institutions lack sufficient research facilities, and the few monies that are available for research are wasted as a result of corruption (Aina et al., 2021).

Many studies have been shelved because of insufficient funding, which frequently demoralizes professors and forces them to relocate to other nations where there are plenty of opportunities for such work. There is a problem with the caliber and applicability of research studies at Nigerian institutions to societal demands. A sufficient amount of funding is needed to do research that is pertinent to 21st-century demands. Research incurs significant costs, many of which are hidden financial burdens on higher education.

Sustainability of Teaching and Learning

Tertiary institutions form a link between knowledge generation and transfer of knowledge to society for their entry into the labour market. Such preparation includes education of teachers (educating the educators) who play the most important role in providing education at all levels. Ogunode (2020) noted that many experienced academic staff, professors especially, have been moving out of Nigeria's higher institutions of learning, to developed countries like the United States of America, Germany, the United Kingdom and many other countries for better offers. This is affecting the quality of teaching in higher institutions in the country. For effective teaching to take place, there is need for adequate professional and experienced lecturers in every higher institution.

III. Theoretical Review

The push-pull hypothesis of migration serves as the foundation for this investigation. Ravenstein, a 19th-century geographer, is credited with inspiring the push-pull idea. According to Ravenstein (1885), there is a push and pull process at work in migration, whereby adverse circumstances such as economic hardship, political oppression, etc. in one location "push" people out, while favorable circumstances in another location "pull" them in (Vassilopoulou et al., 2014).

Empirical Review

Mallo, Eseyin, and Buba (2023) examined how brain drain affected Nigerian higher education. The impact of brain-drain on Nigerian tertiary institution administration was covered in this research. The concept of brain-drain was discussed, and it was determined that there are several factors contributing to it in Nigerian tertiary institutions, including low pay, an unfavorable work environment, a lack of staff development opportunities, inadequate facilities for infrastructure, a history of frequent strikes by both academic and non-academic staff, insecurity, and inadequate funding. Brain-drain types were also discussed.

The study found that there is a dearth of experienced academic staff, a high student-teacher ratio, poor program and research development, and low educational quality as consequences of brain drain. The study recommended that in the future, the government should boost academic staff motivation, implement any agreements reached with trade union groups or civil society organizations in the nation, ensure adequate life and job security in all tertiary institutions, and provide more infrastructural facilities in order to reduce the threat of brain-drain in tertiary institutions and ensure the sustainability of Nigerian tertiary education.

The study conducted by Ojiugo, Chigozie and Eze (2021) examined brain drain and sustainable development in Nigeria. The study looked at the steps the Nigerian government has made to stop brain drain and specifically addressed how the country's efforts to promote sustainable development are impacted by the steady loss of medical and educational personnel. The study's theoretical framework, the push-pull theory of migration, demonstrates that socioeconomic circumstances have been strong push factors in the expanding brain drain phenomena in Nigeria. However, the wealthy nations' components of prosperity dubbed "greener pastures" by Nigerian professionals who relocate there are the draw factors. A supplementary method of data collecting was used in the study.

The study's conclusions demonstrated that Nigeria's ineffective health care system is a direct result of the country's ongoing brain drain of health and educational workers. The crop of academics that are accessible have been working hard to raise the standard of education in Nigeria, despite the fact that it has also contributed to the nation's educational standards declining. It was suggested, among other things, that improved compensation and a pleasant workplace would contribute to a decrease in brain drain and, as a result, improve sustainable growth.

IV. Methodology

The study was conducted in Ogun State, Nigeria. The target population for the study was the entire academic staff members of selected Public Tertiary Institutions from three (3) Senatorial Districts: Ogun Central, Ogun West and Ogun East in the State which consisted of 2058 Academic Staff members. A purposive sampling technique was used to draw 450 respondents from the three (3) Senatorial Districts. 200, 100 & 150 respondents from Ogun Central, Ogun East and Ogun West were selected respectively based on the population of each district. Cross-sectional survey was employed for the study through close-ended questions with 20 items based on 4-point likert scale to elicit necessary data from the respondents. Descriptive statistics with the aid of tables was utilised to summarize the data obtained while multiple regression analysis was adopted for inferential purpose using SPSS version 26. Component factor analysis and Cronbach Alpha statistics were used to examine the validity (80%) and reliability (.767) of the instruments respectively.

Table I: Population Of Academic Staff Members in the Selected Public Tertiary Institutions from Three (3) Senatorial Districts in Ogun State

		Senatorial Districts		
S/N	Public Tertiary Institutions	Ogun Central	Ogun West	Ogun East
1.	Federal University of Agriculture, Abeokuta.	662	-	-
2.	Moshood Abiola Polytechnic, Abeokuta.	183	-	-
3.	The Federal Polytechnic, Ilaro	-	539	-
4.	Olabisi Onabanjo University, Ago Iwoye.	-	-	674
Total		845	539	674
Grand Total		2058		

Source: Field Survey, 2024

The analysis's model is defined thus:

$$SHE = f (ABD)$$

$$= f (PWC, PPP, IRF)$$

$$SHE = \beta_0 + \beta_1PWC + \beta_2PPP + \beta_3IRF + e_t$$

Where:

SHE = Sustainability of Higher Education

ABD= Academic Brain Drain

PWC = Poor Working Condition

PPP = Poor Pay Package

IRF = Inadequate Research Facilities

e_t = Error Term

β_0 = Constant

$\beta_1, \beta_2, \beta_3$ = Co-efficient of the Variables

V. Results and Discussion

Table II: Total Variance Explained

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.299	26.494	26.494	5.299	26.494	26.494
2	4.731	23.656	50.149	4.731	23.656	50.149
3	3.251	16.256	66.406	3.251	16.256	66.406
4	2.790	13.948	80.354	2.790	13.948	80.354
5	2.005	10.026	90.380	2.005	10.026	90.380
6	1.924	9.620	100.000	1.924	9.620	100.000

Source: Field Survey, 2024 using SPSS Version 26

Table II explained the total variance of the components of the study's instrument. The first four components of the study's instrument have explained 80% of the variation of the relationship among the variables as against 50% benchmark. This implies that the study's instrument is valid.

Table III: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
.767	.767	20

Source: Field Survey, 2024 using SPSS Version 26

The study's instrument dependability statistics as shown in Table III are assessed to be $\alpha=.767$ which is above the acceptable rule of thumb of co-efficient value of .70 for Cronbach Alpha's reliability analysis. This suggests that the study's tools are trustworthy.

Table IV: Descriptive Statistics

	Mean	Std. Deviation	N
SHE	12.5333	2.09889	450
PWC	12.6222	2.15428	450
PPP	12.6489	2.40106	450
IRP	12.6511	2.41756	450

Source: Field Survey, 2024 using SPSS Version 26

An overview of the study's sample is provided in Table IV. The Sustainability of Higher Education (SHE) measure has a mean value of 12.5333 and a standard deviation of 2.09889 while the Poor Working Condition (PWC), Poor Pay Package (PPP) and Inadequate Research Facilities (IRP) measures have mean values of 12.6222, 12.6489 and 12.6511 with standard deviations of 2.15428, 2.40106 and 2.41756 respectively.

Table V: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.896 ^a	.803	.802	0.93433	2.055

Source: Field Survey, 2024 using SPSS Version 26

The R-Square estimate is 80.3% ($R^2 = .803$) as seen in Table V. This shows that over 80% of the overall variation in the dependent variable, Sustainability of Higher Education (SHE), could be explained by the independent variables: Poor Working Condition (PWC), Poor Pay Package (PPP) and Inadequate Research Facilities (IRF).

Table VI: Anova^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	1588.656	3	529.552	606.610	.000 ^b
Residual	389.344	446	.873		
Total	1978.000	449			

Source: Field Survey, 2024 using SPSS Version 26

The joint significant association between the independent and dependent variables is shown in Table VI. Based on the probability value of the F-Statistics, which indicates a P-Value of less than 5% ($3/446 = 389.344$, $P < 0.05$), the null hypothesis that there is no significant relationship between the independent variables, Poor Working Condition (PWC), Poor Pay Package (PPP) and Inadequate Research Facilities (IRF), is rejected at a 5% significant level.

Table VII: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.251	.274		4.561	.000
PWC	.395	.042	.406	9.489	.000
PPP	.501	.025	.573	20.013	.000
IRP	-.003	.033	-.004	-.091	.927

Source: Field Survey, 2024 using SPSS Version 26

The P-value of the t-statistics ($\beta = .406$, $t = 9.489$, $P < .05$; $\beta = .573$, $t = .20.013$, $P < .05$; $\beta = -.004$, $t = -.091$, $P > .05$) in table VII shows that Poor Working Condition (PWC) and Poor Pay Package (PPP) have P-values of less than 5% while Inadequate Research Facilities (IRF) has a P-value of more than 5%. This implies that:

- The alternative is accepted at a 95% confidence interval, whereas the null hypothesis that there is no significant association between Sustainability of Higher Education (SHE) and Poor Working Condition (PWC) is rejected at a 5% significant level.
- At the 5% significant level, the alternative hypothesis that there is significant association between Sustainability of Higher Education (SHE) and Poor Pay Package (PPP) is accepted, with a 95% confidence interval.
- At the 5% significant level, the alternative hypothesis that there is significant association between Inadequate Research Facilities (IRF) and Sustainability of Higher Education (SHE) is rejected with a 95% confidence interval.
- Sustainability of Higher Education increases by 0.395 for every unit increase in Poor Working Condition (PWC).
- A unit increase in Poor Pay Package (PPP) brings about 0.501 increase in Sustainability of Higher Education (SHE).
- A unit rise in Inadequate Research Facilities (IRF) develops in -.003 decrease in Sustainability of Higher Education (SHE).

VI. Conclusion

This study examined Academic Brain Drain and its effect on the Sustainability of Higher Education in Public Tertiary Institutions in Ogun State. Poor Working Conditions (PWC) and Poor Pay Package (PPP) have been demonstrated to be strong predictors of Sustainability in Higher Education while Inadequate Research Facilities (IRF) has no significant relationship with Sustainability in Higher Education. The study therefore, concluded that there is a statistically significant relationship between Academic Brain Drain and Sustainability of Higher Education in Public Tertiary Institutions in Ogun State, Nigeria.

Recommendations

Based on the study's findings, it was recommended that good working conditions and upward review of the pay package for Academics be provided in public institutions in order to motivate the Academic Staff members and discourage them from migrating to where greener pasture could be found. Inadequate Research Facilities (IRF) though not significantly related to sustainability of Higher Education in Public Tertiary Institutions in Ogun State, improvement can be made in the provision of sufficient research facilities.

References

1. Abu-Abdissamad, A. M. (2013). Non-financial reward system in Nigeria public and private Organizations. *International Journal of Research in Computer Application and Management*, 3(8), 32-36.
2. Adesote, S.A., & Osunkoya, O.A. (2018). The brain drain, skilled labour migration and its impact on Africa's development, 1990s-2000s. *Africology: The Journal of Pan African Studies*, 12(1), 395-420. <http://jpanafrican.org>
3. Aina, J.K.; Abdulrahman, A.O., Olanipekun, S.S. & Olaoye, O. T. (2021). Nigerian Higher Education Research and the Challenges of Sustainable Development. *American Journal of Creative Education*, 4(1), 1-9.
4. Akinwale, O.E. & George, O.J. (2022), "Personnel brain-drain syndrome and quality healthcare delivery among public healthcare workforce in Nigeria", *Arab Gulf Journal of Scientific Research*, 41(1), 18-39, doi: 10.1108/AGJSR-04-2022-0022.
5. Anetoh, B. C. & Onwudinjo, V. G. (2020). Emigration and the Problem of Brain drain in Nigeria: A Philosophical Evaluation. *Journal of African Studies and Sustainable Development*, 3(1)
6. Burtler J, Francis J, Shinn J, (2022) *Pindus Journal of Culture, Literature, and ELT* ISSN: 8(1) 56-70 <https://literature.academicjournal>.
7. Dakuku, P. (2022, October 3). Exodus of the next generation; Time for real concern, *Premium Times*
8. Ehichoya, E. & Ogunode, N.J. (2020), "Teaching programme in nigerian higher institutions: Challenges of implementation and the way forward", *American Journal of Social and Humanitarian Research*, 1(5), 82-100.
9. Fayomi, O. S. I., Okokpuije, I. P., & Mfon, U. (2018). The role of research in attaining sustainable development goals. Paper presented at the IOP Conf. Series: Materials Science and Engineering.
10. Ibrahim, S. (2017). Tertiary education trust fund (TET Fund), research and development and Nigeria's higher education. *European Journal of Education*, 3(7), 800-817. Available at: 10.5281/zenodo.844096
11. Inarda, A. (2022), "A mixed-methods study on the influence of quality of work-life on commitment and performance", *Problems and Perspectives in Management*, 20(2), 321-334, doi: 10.21511/ppm20(2).2022.27.
12. Jena, L. K. (2016). Employee Performance at Workplace: Conceptual Model and Empirical Validation. *Business Perspectives and Research*.
13. Lebo, M. P., Ukaidi, E. U., Arikpo, N. N., Enya, M. N., & Eja- Osang, J. (2023). Conducive work environment and lecturers' academic performance in tertiary institutions: an econometric approach. *Nigerian Journal of Management Sciences* 24 (2), 65-72
14. Mallo, G.D., Eseyin, A.B. & Buba, S. (2023). Review of the Effect of Brain Drain on Tertiary Education in Nigeria. *International Journal of Education and National Development*, 1(3), 1-10.

15. Ogunode, N.J. (2020). Administration of Public Universities in Nigeria: Problems and Solutions. *Journal Sinesthesia*, 10(2), 86-96
16. Ogunode, N.J., Jegede, D. & Musa, A. (2021), "Problems facing academic staff of Nigerian universities and the way forward", *International Journal on Integrated Education*, 4(1), 230-239.
17. Ogunode N., J. Jegede, D & Abubakar M (2021) Problems Facing Academic Staff of Nigerian Universities and the Way Forward, *International Journal on Integrated Education*, 4 (I), 230-241
18. Ojiugo G. E., Chigozie R. U., & Eze I. J. (2021). Brain drain and sustainable development in Nigeria, 2000-2015. *University of Nigeria Journal of Political Economy*, 11 (1), 278-292.
19. Okafor, C.J. & Chimereze, C. (2020), "Brain drain among Nigerian nurses: implications to the migrating nurse and the home country", *International Journal of Research and Scientific Innovation (IJRSI)*, 7(1), 15-21.
20. Okoli, N.J., Ogbondah L & Ewor, R.N (2016). The History and Development of Public Universities in Nigeria since 1914. *International Journal of Education and Evaluation*. 2 (12)
21. Papi C. (2021). Everything you need to know about brain drain <https://www.linkedin.com/carltapi> (2)41, 112-114
22. Ravenstein, E.G. (1885). The Laws of Migration. *Journal of the Royal Statistical Society* 48(2):167- 227
23. Ryan, R. & Maddeci, E.I. (2012). Self- determination theory and facilitation of intrinsic motivation, social development and well-being. *American Psychologist*, 55, 68-78.
24. Shammout, M. (2021). The impact of work environment on employees' performance. *International Research Journal of Modernization in Engineering Technology and Science*, 3(11), 78-101
25. Tolu-Kolawole, D. (2021). 4,528 Nigerian Doctors moved to UK in six years-Council; *Punch Newspaper* August 12th
26. Ukwoma, S.C. & Onyebinama, C.O. (2021), "Challenges and opportunities of facilitating access and use of open access resources to users by librarians in federal and state universities in Nigeria", *Library Management*, 42(8/9), 481-497, doi: 10.1108/LM-03-2020-0039.
27. Vassilopoulou, F. J., Salamuk, B. & Seierstad, C., (2014) "Balancing Inflows and Outflows in the European Context", in Zbilgin, M. and Groutsis, D. & Harvey, W. (eds) 2014, *International Human Resource Management*, Cambridge University Press, Australia.
28. Won, S.D. & Chang, E.J. (2020), "The relationship between school violence-related stress and quality of life in school teachers through coping self-efficacy and job satisfaction", *School Mental Health*, 12(1), 136-144.
29. Yadav, R. (2022), "A formative measurement model and development of quality of work-life scale based on two-factor theory: evidence from Indian private industries", *Benchmarking: An International Journal*, 30(5), 1713-1733. doi: 10.1108/BIJ-11-2020-0571.