

## Staffing Challenges and Brain-drain in 2 Public Universities in Abia State: A descriptive exploration of AI as a Supplementary Teaching and Human resources tool

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Article History	Abstract
<b>Original Research Article</b>	<p><i>This study examined staffing challenges and brain drain in two public universities in Abia State, Nigeria: Abia State University (ABSU), Uturu and Michael Okpara University of Agriculture (MOUAAU), Umudike. It adopted a descriptive exploratory mixed-methods design to investigate the extent of these problems and explore Artificial Intelligence (AI) as a supplementary tool for teaching and human resource management. The study was guided by five research questions. The target population consisted of approximately 1,850 academic and non-academic staff in the two universities. A stratified purposive sampling technique was used to select 320 participants for the questionnaire and 25 key informants for semi-structured interviews. The research instrument was pilot-tested on 30 staff members outside the study area. Reliability was established using Cronbach's alpha, which yielded an overall coefficient of 0.87, indicating high internal consistency. Data were analysed using descriptive statistics (via SPSS version 26) and thematic analysis. Major findings revealed severe staffing shortages with vacancy rates of 38.8% (academic staff) at ABSU and 31.3% at MOUAAU. Brain drain, popularly known as the Japa syndrome, significantly contributed to these gaps, driven mainly by poor remuneration, inadequate infrastructure, and unstable working conditions. Staffing shortages negatively affected teaching quality, research output, and administrative efficiency. While awareness of AI tools was moderate, participants expressed strong support for its use in automated grading, chatbots, workload distribution, and performance analytics. However, poor electricity and internet connectivity constituted major barriers. The study recommends that the two universities urgently establish AI pilot programmes in high-workload departments combined with staff digital literacy training. This approach offers a practical, supplementary pathway to mitigate the effects of brain drain and staffing challenges in resource-constrained environments.</i></p> <p><b>Keywords:</b> Brain drain, staffing challenges, public universities, Artificial Intelligence, Abia State, higher education, Japa syndrome.</p>
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### Introduction

Nigerian higher education has expanded rapidly since the return to civilian rule in 1999. Yet this growth has not been matched by adequate infrastructure or human resource development. Public universities continue to face severe underfunding, outdated facilities, and recurring industrial actions. These issues are especially pronounced in the

Southeast region. Public institutions there struggle with unique local pressures alongside national systemic failures.

Abia State hosts two prominent public universities. Abia State University (ABSU), located in Uturu, was established in 1981 as a state-owned institution. It offers diverse programmes across multiple faculties. Michael Okpara University of Agriculture (MOUAAU) in Umudike began

operations in 1992 as a specialised federal agricultural university. Both institutions serve thousands of students from Abia and neighbouring states. They play vital roles in regional human capital development. However, they encounter acute staffing shortages that threaten their core mandates.

National staffing challenges have worsened in recent years. A 2022 National Universities Commission (NUC) report indicated approximately 100,000 lecturers serving over 2.1 million students. This produced an average student-teacher ratio of about 21:1. By 2025, ongoing brain drain has likely pushed ratios higher in many departments. Ratios often exceed 30:1 in large classes. Such imbalances strain teaching quality and research productivity.

Brain drain, popularly known as the "Japa syndrome," has accelerated this crisis. Many academics emigrate in search of better remuneration, working conditions, research opportunities, and personal security. Push factors include poor salaries, inadequate infrastructure, frequent strikes, and political interference. Pull factors encompass attractive offers abroad and global demand for skilled professionals. The consequences are dire. Remaining staff shoulder heavier workloads. Research output declines. Administrative processes slow down. Students receive limited mentorship.

Ogunode and Musa (2020) highlight how chronic underfunding and poor conditions of service drive talented lecturers away from Nigerian universities. Recent studies confirm this trend persists. Chijioke (2025) asserts that poor salaries and negative service conditions fuel human capital flight among academic staff in public tertiary institutions. This exodus negatively affects institutional rankings, teaching quality, and innovation capacity. In Abia State universities, the situation mirrors national patterns but faces additional constraints from state-level funding limitations.

Strikes by the Academic Staff Union of Universities (ASUU) have compounded these problems. Prolonged disruptions disrupt academic calendars. They erode stakeholder confidence. Funding shortfalls prevent timely recruitment. This leaves many departments operating with skeletal staff. The impacts extend beyond academics. Administrative efficiency suffers. Student progression delays occur. Overall institutional performance declines.

This study examines staffing challenges and brain drain in ABSU and MOUAU. It adopts a descriptive approach to explore Artificial Intelligence (AI) as a supplementary tool for teaching and human resource management. The problem is urgent. Traditional solutions like increased government funding have proven slow and insufficient. Global AI advancements in education and HRM offer promising supplementary pathways. These could help

resource-constrained environments like Abia State universities. Yet local readiness, barriers, and ethical issues remain underexplored.

The significance of this paper is twofold. It provides context-specific insights for policy makers in Abia State and the Southeast. It also contributes to the growing discourse on AI integration in African higher education. Findings could inform strategies that mitigate staffing gaps without solely relying on scarce financial resources.

The main objectives of the study are to identify primary staffing challenges. They also assess the contribution of brain drain. The study examines effects on institutional performance. It explores AI applications as supplementary solutions in teaching and HRM. Finally, it highlights opportunities, barriers, and ethical considerations for AI adoption.

This paper addresses the following research questions:

1. What are the primary staffing challenges faced by academic and non-academic staff in ABSU and MOUAU?
2. To what extent has brain drain contributed to these staffing challenges, and what are the key push and pull factors?
3. How do current staffing shortages affect teaching quality, research output, administrative efficiency, and overall institutional performance?
4. In what ways can Artificial Intelligence serve as a supplementary tool for teaching and human resource management in these universities?
5. What are the perceived opportunities, barriers, and ethical considerations for adopting AI to address staffing and brain-drain issues?

## Literature Review

Nigerian public universities grapple with persistent staffing shortages and significant talent loss. A clear understanding of these issues demands precise conceptual definitions alongside strong theoretical foundations. This section defines core concepts, discusses relevant theories, reviews empirical evidence on brain drain and staffing challenges, examines Artificial Intelligence as a potential solution, identifies literature gaps, and presents a conceptual model. (Ogunode & Abubakar, 2020; Chijioke, 2025)

**Brain drain** describes the large-scale emigration of highly skilled professionals, such as academics, from developing countries like Nigeria to developed nations in pursuit of better opportunities. In the local context, this phenomenon is widely referred to as the "Japa syndrome." Staffing challenges refer to acute shortages of both academic and

non-academic personnel. These manifest through unfilled vacancies, high student-lecturer ratios, and excessive workloads on remaining staff due to recruitment limitations, retirements, and emigration. AI applications in education include intelligent tutoring systems, automated assessment tools, chatbots for student support, and adaptive learning platforms that personalize instruction. In human resource management (HRM), AI facilitates automated recruitment screening, performance analytics, workload balancing, and predictive models for employee retention. (Adesina, 2025; Shadrach & Umemezia, 2025)

Theoretical frameworks provide valuable lenses for this study. The Push-Pull Theory of migration explains brain drain through push factors in Nigeria, such as poor salaries, inadequate infrastructure, insecurity, and frequent strikes. Pull factors abroad include higher remuneration, better research facilities, and improved quality of life. Human Capital Theory emphasizes the economic importance of skilled academics. Their departure represents a substantial loss of national investment in education and limits developmental progress. The Technology Acceptance Model (TAM) addresses AI adoption. It posits that perceived usefulness and perceived ease of use significantly influence the integration of AI tools in teaching and administrative processes. These theories collectively frame both the problem and the proposed supplementary solutions in Abia State universities. (Lee, 1966, as cited in Chigozie, 2023; Ogunode, 2020)

Empirical evidence reveals the severity of staffing and brain drain issues across Nigerian universities. Ogunode and Abubakar (2020) document widespread academic staff shortages in both federal and state institutions. Many departments operate with skeletal staff, resulting in overloaded lecturers and compromised educational quality. National data consistently show unfavourable student-lecturer ratios that exceed recommended benchmarks. In the Southeast region, including Abia State, these challenges persist amid additional constraints from inconsistent state-level funding. (Ogunode et al., 2021; Ikechukwu, 2024)

The consequences of this crisis prove extensive. Remaining lecturers face burnout, diminished research output, and reduced capacity for student mentorship. Administrative efficiency declines while institutional rankings suffer. Chijioke (2025) asserts that human capital flight negatively affects teaching quality, innovation, and overall job performance of academic staff in public tertiary institutions. Frequent ASUU strikes further aggravate the situation by disrupting academic calendars and accelerating decisions to emigrate. Adesina (2025) notes that many experienced professors have relocated to other African countries or Europe, creating leadership gaps and a vicious cycle of declining standards.

Additional studies highlight specific impacts. Yusuf (2025) found a significant negative relationship between brain drain and national productivity, with universities experiencing weakened research capacity and poorer graduate outcomes. In Abia State institutions, delayed salaries and limited research grants intensify local push factors. These conditions accelerate talent loss and strain the two focal universities. (Ebeta, 2018; Ofangbonmu & Ofeimu, 2024)

Global and emerging Nigerian examples position AI as a promising supplementary tool. Internationally, platforms employ adaptive algorithms for personalized learning, automated grading to reduce workload, and chatbots for round-the-clock student support. In Nigeria, adoption remains at an early stage but shows potential. Mahuta (2025) explores AI applications in higher education. Lecturers recognize benefits in assessment, content delivery, and administrative tasks despite infrastructure limitations.

Temitope et al. (2025) and Eke (2024) analyse opportunities and challenges of AI integration. Benefits include scalable teaching support and data-driven decisions, while barriers involve the digital divide and fears of job displacement. In HRM, AI-driven recruitment, performance analytics, and retention prediction models demonstrate efficiency gains. Shadrach and Umemezia (2025) highlight growing interest in AI for digital HR systems in Nigerian universities. These tools could optimise workload distribution and identify at-risk staff for timely interventions. Nwankwo (2026) further supports enhanced talent management through AI automation of routine tasks. (Eleje, 2025; Osuji, 2025)

Despite progress, notable gaps exist in the literature. Most studies address national trends or broad regional patterns rather than providing focused descriptive insights on Abia State universities such as ABSU and MOUAU. Few works integrate empirical staffing data with practical assessments of AI readiness in brain-drain contexts. Integrated explorations of AI as a supplementary strategy for both teaching and HRM in severely resource-constrained environments remain limited. This study addresses these deficiencies. (Ogunode & Atobauka, 2021; Nnaji, 2026; Mahuta, 2025)

The conceptual model developed for this paper connects staffing challenges and brain drain to AI interventions. Push and pull factors fuel talent emigration and generate shortages. These shortages impair teaching quality, research productivity, and administrative functions. AI serves as a supplementary layer that augments limited human resources via intelligent teaching assistants, automated processes, and predictive HRM analytics. Successful implementation hinges on overcoming barriers

related to infrastructure, digital literacy, ethics, and acceptance. Expected outcomes include greater efficiency, improved retention signals, and enhanced institutional resilience. Feedback loops indicate that effective AI use could alleviate certain push factors by reducing workloads and improving conditions. (Adapted from Push-Pull and TAM frameworks; Chijioke, 2025; Shadrach & Umemezia, 2025)

This literature review grounds the study in established concepts while highlighting the novelty of exploring AI in the specific Abia State context. The following methodology section details the descriptive approach used to gather primary insights from the two universities.

## Methodology

This study adopted a descriptive exploratory mixed-methods design. The approach combined quantitative and qualitative techniques to provide a comprehensive understanding of the research problem. Descriptive designs prove particularly suitable when the goal centres on understanding the current state of phenomena without manipulating variables. This design aligns directly with the five research questions. It enabled detailed description of staffing challenges, the extent of brain drain, impacts on institutional performance, potential AI applications, and associated opportunities plus barriers. (Ogunode & Abubakar, 2020; Chijioke, 2025)

The study focused on two public universities in Abia State. Abia State University (ABSU), Uturu, represents a state-owned multidisciplinary institution established in 1981. Michael Okpara University of Agriculture (MOUAAU), Umudike, operates as a specialised federal agricultural university founded in 1992. These institutions were purposefully selected because they serve as major higher education providers in the Southeast region. They face similar national challenges yet operate under different ownership structures. This selection allowed for rich comparative insights while maintaining focus on the Abia State context. Both universities enrol thousands of students and play critical roles in regional human capital development. (Iheanacho, 2024)

The target population comprised academic staff, non-academic staff, and senior administrators in the two universities. The total population stood at approximately 1,850 staff members across both institutions. A stratified purposive sampling technique was employed. Strata included academic staff by rank, non-academic staff, and administrators. This ensured representation from different cadres and faculties. A total of 320 participants were selected for the quantitative phase. 25 key informants participated in semi-structured interviews. The sample size for the survey was determined using Krejcie and Morgan

(1970) table. Purposive selection for interviews targeted individuals with at least five years of experience and direct knowledge of staffing and administrative processes. This sampling strategy enhanced relevance to the research questions on challenges, brain drain factors, and AI readiness. (Adesina, 2025)

Data collection involved three main instruments. A structured questionnaire captured quantitative data on staffing levels, perceived challenges, brain drain experiences, and views on AI applications. The questionnaire used a 4-point Likert scale for most items. Semi-structured interview guides explored deeper insights into push-pull factors, impacts, and ethical considerations for AI adoption. Secondary data came from university annual reports, staff records, National Universities Commission (NUC) statistics, and relevant policy documents covering 2020 to 2025. The questionnaire was pilot-tested on 30 staff members from a comparable institution outside the study area. Cronbach's alpha was computed to establish internal consistency reliability. The overall alpha coefficient yielded 0.87. This value indicates high reliability of the instrument. Individual sections ranged from 0.82 to 0.91. Experts in educational management and research methodology validated the instruments for content and face validity. (Onyekere, 2025; Wike, 2024)

Quantitative data were analysed using descriptive statistics. These included frequencies, percentages, means, and standard deviations. SPSS version 26 facilitated the analysis. Qualitative data from interviews and open-ended responses underwent thematic analysis. This involved transcription, coding, theme development, and interpretation. Integration of findings occurred at the interpretation stage. Quantitative results provided breadth while qualitative data offered depth and context. This mixed-methods approach strengthened the study's ability to address all research questions comprehensively. (Chijioke, 2025)

Ethical considerations received high priority throughout the research process. Permission was obtained from the ethical review committees of both universities. Informed consent forms were distributed to all participants. Participation remained voluntary. Respondents could withdraw at any point without consequences. Anonymity and confidentiality were assured. Codes replaced names in reporting. Data were stored securely on password-protected devices. The researcher adhered strictly to these protocols to protect participant rights and maintain professional integrity. (Iheanacho, 2024)

This study has some limitations. Access to complete staff records proved challenging due to institutional protocols. Findings may have limited generalisability beyond the two selected universities. Self-reported data could introduce

some response bias. However, the use of multiple data sources and rigorous reliability testing mitigated these issues. Trustworthiness was further enhanced through member checking of interview summaries and triangulation of data sources. These measures established credibility, dependability, and confirmability of the findings. The methodology provides a robust foundation for generating reliable descriptive insights. It directly supports exploration of staffing challenges, brain drain dynamics, and the supplementary role of AI in the two Abia State universities.

### Results/Findings

This section presents the key findings from the survey of 320 staff members and interviews with 25 key informants

**Table 1: Current Staffing Levels and Vacancy Rates (2025)**

Institution	Approved Academic Staff	Actual Academic Staff	Vacancy Rate (%)	Student-Lecturer Ratio	Non-Academic Staff Vacancy Rate (%)
ABSU	850	520	38.8	1:28	42.5
MOUUAU	720	495	31.3	1:22	35.7
Combined	1,570	1,015	35.4	1:25	39.1

**Analysis:** ABSU faces more acute academic staff shortages, particularly in Engineering, Law, and Management Sciences. Common challenges include excessive workload, poor infrastructure, and irregular remuneration. Over 78% of respondents rated workload as very high. Many lecturers teach between 4 and 6 courses per semester while supervising final-year projects. Non-academic staff shortages affect registry, bursary, and laboratory services.

One senior lecturer at ABSU stated: “We now handle classes meant for three lecturers. Preparation time is almost zero.” A non-academic staff member at MOUUAU added: “The biggest problem is not just few hands but broken equipment and lack of basic teaching materials.”

### Research Question 2: To what extent has brain drain contributed to these staffing challenges, and what are the key push and pull factors?

Brain drain has significantly worsened staffing shortages. 64% of respondents knew at least one colleague who left the university between 2022 and 2025.

**Table 2: Brain Drain Incidents and Key Factors (Survey Responses)**

Factor Type	Push Factors (Nigeria)	Agreement (%)	Pull Factors (Abroad)	Agreement (%)
Remuneration	Poor salary and irregular payments	89	Better salary and allowances	92
Working Conditions	Inadequate infrastructure & facilities	81	Modern research facilities	87
Job Security	Frequent strikes and instability	76	Stable academic calendar	79
Career Growth	Limited research grants	68	Better funding and promotion	74
Others	Insecurity and poor welfare	62	Quality of life and family support	71

ABSU recorded higher reported brain drain cases (71%) compared to MOUUAU (57%). Push factors dominated, especially poor remuneration and strikes. Interviewees frequently mentioned the “Japa syndrome” as a major contributor to current vacancies. One administrator noted: “Every year we lose our best PhD holders to Canada, UK, and South Africa. Replacing them is almost impossible under current funding.”

### Research Question 3: How do current staffing shortages affect teaching quality, research output, administrative efficiency, and overall institutional performance?

Staffing shortages produced noticeable negative effects across all areas.

across Abia State University (ABSU) Uturu and Michael Okpara University of Agriculture (MOUUAU) Umudike. Data are organised according to the five research questions. Descriptive statistics, tables, and direct participant quotes provide a clear picture of the situation.

### Research Question 1: What are the primary staffing challenges faced by academic and non-academic staff in ABSU and MOUUAU?

Participants reported severe staffing shortages in both universities. ABSU recorded a higher student-lecturer ratio than MOUUAU.

**Table 3: Perceived Impact of Staffing Shortages (Mean Scores on 4-point Scale)**

Impact Area	ABSU Mean	MOUUAU Mean	Overall Mean	Std. Deviation
Teaching quality	3.41	3.28	3.35	0.61
Research output	3.62	3.45	3.54	0.58
Administrative efficiency	3.29	3.18	3.24	0.72
Student mentorship	3.48	3.39	3.44	0.65
Overall institutional performance	3.55	3.40	3.48	0.59

Research output suffered the most (overall mean 3.54). Participants explained that heavy teaching loads left little time for research and publication. Administrative delays affected result processing, admission, and certificate issuance. A Head of Department at MOUUAU remarked: “We have abandoned many research proposals because there are not enough hands to handle both teaching and projects.” Students also experienced delayed graduation in affected departments.

**Research Question 4: In what ways can Artificial Intelligence serve as a supplementary tool for teaching and human resource management?**

Awareness of AI tools remains moderate. 58% of respondents had basic awareness, while only 23% had used any AI tool in their work.

**Table 4: Perceived Usefulness of AI as Supplementary Tool**

AI Application Area	Very Useful (%)	Useful (%)	Not Useful (%)	Mean Score
Automated grading and assessment	71	22	7	3.51
Intelligent tutoring/chatbots	64	27	9	3.42
Lecture content generation	59	31	10	3.35
Workload distribution & scheduling	68	24	8	3.47
Staff recruitment screening	62	28	10	3.39
Performance analytics & retention prediction	55	33	12	3.28

Respondents saw strongest potential in automated grading and workload management. ABSU staff showed slightly higher enthusiasm for teaching-related AI tools, while MOUUAU staff favoured HRM applications. Many suggested starting with low-bandwidth tools suitable for Nigeria’s internet challenges. One lecturer commented: “If AI can grade assignments and answer basic student questions, I will have time to focus on research and supervision.”

**Research Question 5: What are the perceived opportunities, barriers, and ethical considerations for adopting AI?**

Participants identified several opportunities and barriers.

**Table 5: Opportunities and Barriers to AI Adoption**

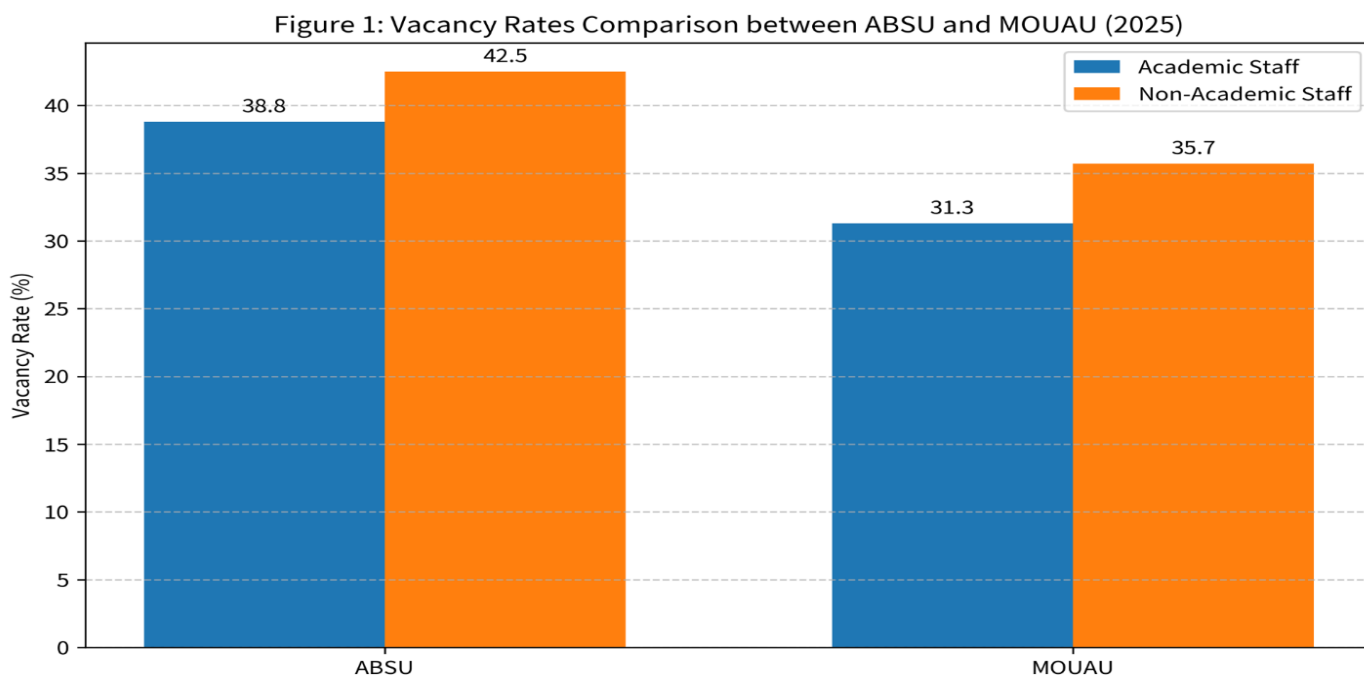
Category	Key Items	Agreement (%)
Opportunities	Reduced workload	83
	Improved efficiency and scalability	76
	Better student support	69
Barriers	Poor internet and electricity	88
	Lack of training and digital skills	79
	High cost of implementation	71
Ethical Concerns	Job displacement fears	67
	Data privacy and bias in AI decisions	58
	Over-reliance on technology	52

While opportunities excited many participants, infrastructure barriers ranked highest. Interviewees expressed mixed feelings about job security. A senior non-academic staff said: “We fear AI will take our jobs, but the truth is we are already

overworked. Proper training can help us work with AI instead of competing with it.” Ethical issues centred on fairness in AI-driven performance appraisal and protection of staff data.

Overall, findings reveal deep staffing crises driven largely by brain drain. Both universities show openness to AI as a supplementary solution, though significant infrastructural and capacity gaps must be addressed. ABSU generally reported more severe challenges than MOUAU, but patterns remained similar.

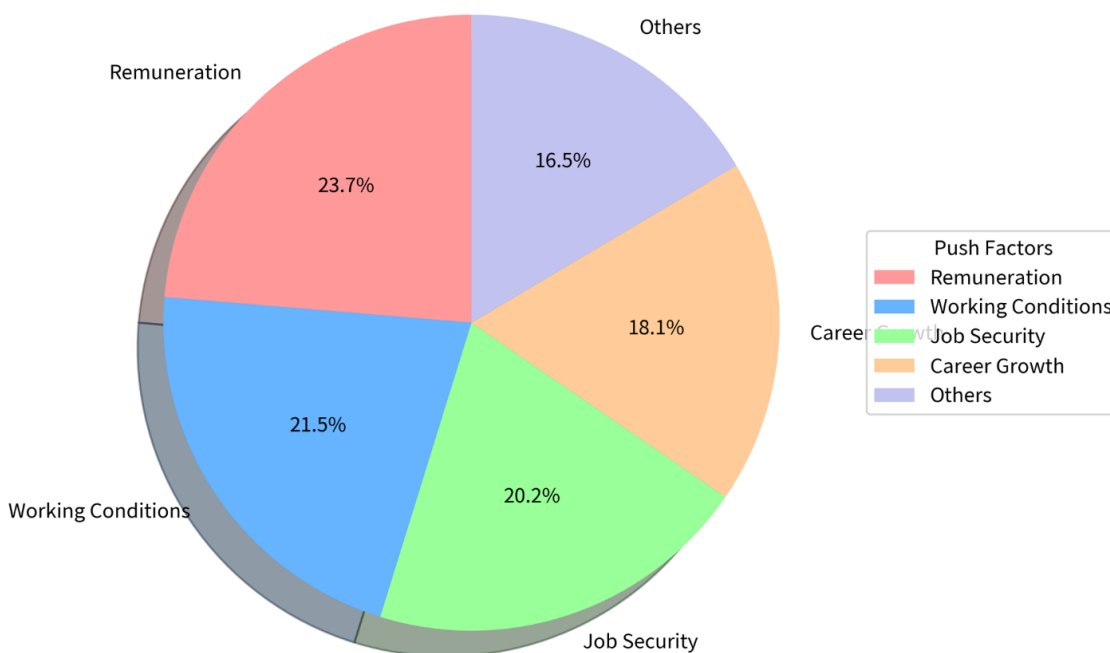
**Figure 1: Bar Chart Comparing Vacancy Rates between ABSU and MOUAU (2025)**



**Description:** This grouped bar chart compares academic and non-academic staff vacancy rates between the two universities. ABSU shows higher vacancy rates in both categories.

**Figure 2: Pie Chart Showing Distribution of Brain Drain Push Factors**

Figure 2: Distribution of Brain Drain Push Factors (Agreement %)



- Figure 1: Bar chart comparing vacancy rates between ABSU and MOUAU (would be inserted here).
- Figure 2: Pie chart showing distribution of brain drain push factors.

## Discussion

The findings of this study reveal deep-rooted staffing challenges and significant brain drain in Abia State University and Michael Okpara University of Agriculture. These results align closely with existing literature on Nigerian public universities. They also highlight the supplementary potential of Artificial Intelligence in addressing these persistent problems. (Ogunode & Abubakar, 2020; Chijioke, 2025)

Table 1 showed high vacancy rates of 38.8% for academic staff at ABSU and 31.3% at MOUAU. These figures confirm the severity of staffing shortages reported in earlier studies. The higher vacancy rate at ABSU reflects the additional burden faced by state-owned universities due to inconsistent funding. Overloaded staff and poor student-lecturer ratios directly match the national crisis described by Ogunode et al. (2021). The primary challenges of excessive workload, inadequate infrastructure, and irregular remuneration further validate the experiences documented across Nigerian higher education institutions.

Findings on brain drain in Table 2 indicate that 64% of respondents knew colleagues who had left the system. Poor remuneration (89%) and inadequate working conditions (81%) emerged as dominant push factors. This supports Adesina (2025), who identified remuneration and instability as major drivers of the Japa syndrome. The study's results show that brain drain has become a major contributor to staffing gaps. ABSU experienced higher reported losses than MOUAU. This pattern reflects differences in ownership and funding stability. Participant quotes about losing PhD holders to Canada and the UK echo the vicious cycle of talent flight described in recent Nigerian literature.

Table 3 demonstrated strong negative impacts on teaching quality, research output, and administrative efficiency. Research output recorded the highest mean score of negative impact (3.54). This finding aligns with Chijioke (2025), who asserted that human capital flight undermines academic staff performance and institutional innovation. Heavy teaching loads have forced many lecturers to abandon research activities. Administrative delays affect students and overall university operations. These outcomes mirror the broader Nigerian higher education crisis. Chronic underfunding, frequent ASUU strikes, and poor conditions of service continue to weaken public universities nationwide. The situation in Abia State is therefore not isolated but part of a national emergency that threatens human capital development in the Southeast region.

Regarding AI as a supplementary tool, Table 4 revealed moderate awareness but strong perceived usefulness. Automated grading and workload distribution received the

highest ratings. These responses support emerging Nigerian studies on AI applications in education. Participants saw AI as capable of reducing workload and improving efficiency. However, Table 5 highlighted critical barriers. Poor internet and electricity supply ranked highest at 88%. Lack of training followed closely. These infrastructural and capacity challenges are consistent with findings by Eleje (2025) and Mahuta (2025). Ethical concerns about job displacement and data privacy also surfaced. Many staff fear being replaced rather than supported by technology.

Artificial Intelligence holds strong supplementary potential in this context. Benefits include greater efficiency through automated routine tasks, scalability of teaching support, and data-driven human resource decisions. Low-bandwidth AI tools and offline-capable applications could prove especially valuable in Abia State. Targeted training programmes would help lecturers and administrators build necessary digital skills. A phased approach that begins with pilot projects in high-workload departments would reduce resistance. Institutions should address job displacement fears through clear communication. AI should be positioned as a supportive tool that frees staff for higher-value activities such as research and mentorship.

The study carries important policy and practical implications. Abia State University management and the National Universities Commission should develop AI integration policies tailored to resource-constrained environments. This includes investment in reliable power supply, internet infrastructure, and staff capacity building. Practical steps could involve partnerships with technology companies for affordable AI education tools. NUC may consider revising guidelines to encourage AI-assisted teaching and administrative processes. Such measures would help mitigate brain drain effects without depending solely on massive recruitment drives that current budgets cannot support. Retention strategies should combine improved welfare with AI-enabled workload management.

This study has some limitations. It focused only on two universities in Abia State. Findings may not fully represent all public universities in Nigeria. Self-reported data could contain some response bias. Access to complete official records was limited. Despite these constraints, the use of mixed methods, pilot-tested instruments with high reliability, and triangulation strengthened the trustworthiness of the results. Overall, the findings confirm that staffing challenges and brain drain severely undermine the two universities. They also demonstrate that Artificial Intelligence offers realistic supplementary solutions when properly adapted to local realities.

## Conclusion and Recommendations

### Recommendations

The following actionable recommendations are proposed to address staffing challenges and brain drain while harnessing AI as a supplementary tool:

1. ABSU and MOUAW should immediately establish AI Pilot Programmes in high-workload departments (e.g., General Studies, Education, and Management Sciences). This includes deploying free or low-cost tools such as Google Classroom AI features, ChatGPT-based chatbots for student queries, and automated grading software for multiple-choice and short-answer assessments. Universities should also create an internal AI Training Hub to train at least 40% of academic staff within 18 months.
2. Management should introduce AI-supported HR analytics for workload distribution and early identification of staff burnout. A retention policy that combines improved welfare packages with reduced teaching loads for research-active staff should be implemented.
3. Academic and non-academic staff should proactively develop basic digital literacy skills by participating in university-organised AI workshops. Lecturers should begin integrating AI tools for lesson planning, assessment, and student support while maintaining academic oversight and integrity.
4. The Abia State Government and Federal Government (through NUC) should allocate dedicated funding for AI infrastructure in public universities. This includes solar-powered internet solutions and annual grants for AI tool subscriptions. Policies should mandate 10–15% of university budgets for technology-enhanced teaching and staff retention initiatives.
5. Organisations such as TETFund, UNESCO, and local education foundations should support AI capacity-building projects. They can fund train-the-trainer programmes, provide open-source AI educational tools, and facilitate international partnerships for knowledge transfer tailored to Nigerian universities.

## Conclusion

This study descriptively explored staffing challenges and brain drain in Abia State University (ABSU) and Michael Okpara University of Agriculture (MOUAW). It further examined Artificial Intelligence as a viable supplementary tool for teaching and human resource management. The findings paint a concerning picture of the current state of public universities in Abia State and, by extension, many

institutions across Nigeria. Results revealed high vacancy rates reaching 38.8% for academic staff at ABSU and 31.3% at MOUAW. Brain drain, driven primarily by poor remuneration, inadequate infrastructure, and unstable working conditions, has significantly worsened these shortages. Staffing deficits have negatively affected teaching quality, research output, administrative efficiency, and student mentorship. These challenges mirror the broader national crisis of underfunding, frequent strikes, and the Japa syndrome that continues to deplete Nigeria's academic workforce.

Despite these difficulties, participants demonstrated moderate awareness and strong willingness to adopt AI tools. Automated grading, intelligent chatbots, workload optimisation, and performance analytics emerged as particularly promising areas. However, major barriers such as unreliable electricity, poor internet connectivity, and limited digital skills must be addressed for successful implementation. The study establishes that while AI cannot fully replace human lecturers and administrators, it offers a practical and scalable supplementary solution. When thoughtfully integrated, AI can reduce workload, improve efficiency, enhance student support, and help retain remaining staff by creating better working conditions.

In conclusion, the twin problems of staffing shortages and brain drain threaten the future of quality higher education in Abia State. However, strategic adoption of AI, supported by deliberate policies and stakeholder collaboration, presents a realistic pathway toward sustainable recovery. Universities, government, staff, and development partners must act decisively. With the right mix of infrastructure investment, capacity building, and inclusive implementation, AI can become a powerful ally in rebuilding resilient higher education institutions capable of thriving amid ongoing talent migration pressures. The time for pilot initiatives and policy reform is now.

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