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Comparative Analysis of ICT Utilization Among Women in Academics at the University of Benin and Adekunle Ajasin University

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ABSTRACT

This study examines and compares the level of Information and Communication Technology (ICT) utilization among women in academics at the University of Benin (UNIBEN) and Adekunle Ajasin University (AAUA). The study investigates the extent to which female academic staff employ ICT tools for teaching, research, and communication purposes, and how institutional context influences this usage. Using a structured questionnaire administered to a sample of 180 respondents, the study adopted a descriptive survey design and employed inferential statistics to assess differences in ICT engagement between the two universities. Results indicate significant disparities in access, frequency of use, and perceived productivity outcomes, with women in UNIBEN demonstrating higher engagement in research-oriented ICT tasks. The findings suggest the need for institutional reforms to address gender-sensitive ICT policies and infrastructural improvements to promote inclusivity.

Keywords: ICT utilization, women in academics, digital divide

INTRODUCTION

The transformative influence of Information and Communication Technology (ICT) on all aspects of modern life cannot be overemphasised. ICT refers to a diverse set of technological tools and resources used to transmit, store, create, share or exchange information, including computers, the internet, broadcasting technologies, and telephony (Khyade, 2022). In the context of higher education, ICT has revolutionized the delivery of knowledge, research, and administrative operations. The shift from analogue to digital operations has redefined academic practices, enabling flexibility, efficiency, and innovation in teaching and learning processes (Adelabu & Adu, 2019).

Globally, ICT has been embraced as a catalyst for educational transformation. The World Summit on the Information Society (WSIS) emphasized the role of ICT in advancing inclusive education and bridging information gaps (UNESCO, 2015). In Nigerian universities, the implementation of ICT policies and the deployment of digital tools have been on the rise, with institutions striving to digitalize their academic and administrative operations (Aduwa-Ogiegbaen & Iyamu, 2020). Universities such as the University of Benin and Adekunle Ajasin University have made various strides in ICT adoption, albeit with varying degrees of success and support structures. Despite the advances in ICT infrastructure and policy, a significant digital divide persists, particularly along gender lines. Women in academia often encounter unique challenges in accessing and utilizing
ICT tools, ranging from socio-cultural barriers to institutional neglect (Hafkin, 2018). These disparities are embedded in structural inequalities and are further exacerbated by inadequate training, limited digital literacy, and rigid work schedules that disproportionately affect female lecturers (Gurumurthy, 2021).

Theoretical models such as the Technology Acceptance Model (TAM), the Diffusion of Innovations (DOI), and the Unified Theory of Acceptance and Use of Technology (UTAUT) offer insights into the factors

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influencing ICT adoption. TAM emphasizes perceived usefulness and perceived ease of use as determinants of technology acceptance (Davis, 2019). DOI, developed by Rogers (2011), categorizes adopters based on their readiness to embrace innovation, ranging from innovators to laggards. UTAUT integrates key constructs from previous models, identifying performance expectancy, effort expectancy, social influence, and facilitating conditions as core determinants of technology use (Venkatesh et al., 2018). These frameworks are particularly useful in understanding how female academics perceive, accept, and integrate ICT tools into their professional routines.

ICT usage in academia transcends teaching; it includes research activities, student interaction, conference participation, curriculum development, and administrative duties. Effective ICT utilization enhances research output, facilitates access to academic resources, and supports pedagogical innovation (Olatokun, 2021). Women in academics, who are often burdened with balancing family responsibilities and professional expectations, stand to benefit greatly from ICT if adequately supported. Through ICT, they can access virtual libraries, participate in online professional development, collaborate with peers across the globe, and engage in remote teaching (Okukpon & Akerele, 2015). However, studies reveal that women in Nigerian academia are still underrepresented in ICT adoption. Hafkin (2018) noted that gender disparities in ICT are reinforced by cultural norms that restrict women's mobility and participation in male-dominated technological spaces. Similarly, Saeed and Farooqi (2019) observed that work-life imbalance and lack of institutional support inhibit women's professional engagement with digital tools. According to Ojo, Odunlade, and Adekanye (2023), research productivity, a key criterion for academic promotion, is highly dependent on ICT access and use, which is a factor that places women at a disadvantage in the absence of targeted interventions.

UNESCO (2020) has highlighted the need for gender-sensitive ICT policies that acknowledge the specific needs of women in academia. The Sustainable Development Goals (SDGs), particularly Goal 5, underscore the importance of empowering women through technology. In line with this, Nigerian universities must develop inclusive strategies that provide equal opportunities for female lecturers to access ICT infrastructure, participate in digital training, and contribute meaningfully to academic discourse.

In the light of these considerations, this study undertakes a comparative analysis of ICT utilization among women in academics at the University of Benin (UNIBEN) and Adekunle Ajasin University (AAUA). These two institutions represent contrasting institutional contexts UNIBEN as a federal university with relatively robust ICT systems, and AAUA as a state university navigating resource limitations. This comparative lens enables the exploration of how institutional environments mediate ICT engagement among female academic staff. Understanding these dynamics is essential for promoting equity in digital access and enhancing the professional experiences of women in academia. This study not only contributes to the literature on gender and ICT in higher education but also offers practical recommendations for policy reform and institutional development.

Statement of the Problem

Despite the increasing availability of ICT infrastructure in Nigerian universities, women in academics continue to experience constraints in access and utilization. While some progress has been made in promoting digital inclusivity, however, there appears to be some disparities across institutions in Nigeria. The extent to which institutional factors influence ICT engagement among female academic staff has not been fully explored. This study seeks to fill this gap by comparing the level of ICT utilization among women in academics in UNIBEN and AAUA, with a focus on identifying differences in access, usage patterns, and perceived productivity outcomes.

Research Questions

The study was guided by the following research questions:

1. What ICT applications are commonly used by women in academics in the two universities?

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2. Is there a significant difference in the level of ICT utilization between the two universities?

3. Is there a difference in the ICT infrastructures available to women in academics between in UNIBEN and
AAUA?

Research Hypotheses

The research questions 2 and 3 were reformulated into the following hypotheses and tested at 0.05 level of significance:

H_{01}: There is no significant difference in the level of ICT utilization among women in academics in UNIBEN and AAUA.

H_{02}: There is no significant difference in the ICT infrastructures available to women in academics between in UNIBEN and AAUA.

METHODOLOGY

The study adopted a descriptive survey design to explore and compare ICT utilization among women academic staff in UNIBEN and AAUA. A structured questionnaire was the main instrument for data collection. The target population comprised female academic staff across faculties in both universities. A total of 180 respondents (90 from each university) were selected using purposive and stratified sampling techniques to ensure representation across various academic ranks and departments. The questionnaire was divided into sections addressing demographic information, availability and access to ICT infrastructure, frequency of ICT usage, and perceptions of ICT impact on academic productivity.

The instrument was subjected to both face and content validity by experts in educational technology and measurement. A pilot test was conducted among 20 female academic staff from another university, yielding a Cronbach's alpha coefficient of 0.82, confirming its reliability. Data were collected through direct administration and online survey links distributed via institutional mailing lists. Descriptive statistics such as means and ranking were used to analyze responses, while inferential statistics including t-tests and Pearson's r were used to test the hypotheses at 0.05 level of significance.

RESULTS

The results of the collected analysed data were systematically presented in tables and discussed.

Research Question 1: What ICT applications are commonly used by women in academics in the two universities?

Table 1: Data on the ICT Applications Commonly Used by Women-in-Academics in the Two Universities

ICT Application	**UNIBEN Mean Score**	**AAUA Mean Score**	**Cluster Mean**	**Rank**
Microsoft Word	3.65	3.52	3.59	1
Email (e.g., Gmail, Yahoo)	3.53	3.35	3.44	2
WhatsApp for academic purposes	3.49	3.42	3.46	3
ICT Application	**UNIBEN Mean Score**	**AAUA Mean Score**	**Cluster Mean**	**Rank**

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Google Scholar/ResearchGate	3.40	3.10	3.25	4
PowerPoint for presentations	3.32	3.18	3.25	5
SPSS and data analysis tools	2.90	3.62	2.76	6
Online journal databases (JSTOR, AJOL)	2.72	2.31	2.52	7
Learning Management Systems	2.40	2.55	2.48	8
Social media (Twitter, Facebook)	2.21	2.35	2.28	9

Source**:** Survey Data, 2025

As shown in Table 1, both universities' female academic staff commonly use basic and communication oriented ICT applications such as Microsoft Word, Email, and WhatsApp, with the highest mean scores and top three ranks. These tools are essential for document preparation, correspondence, and group communication. Research-related platforms such as Google Scholar/ResearchGate and presentation software like PowerPoint follow closely, indicating moderate to high engagement with scholarly dissemination tools. However, more specialized applications like SPSS, online databases, and Learning Management Systems (LMS) were used less frequently, indicating either limited access, insufficient training, or lower emphasis on digital teaching platforms, particularly in AAUA. Surprisingly, social media tools ranked lowest, suggesting minimal use for professional or academic purposes. This pattern underscores a trend: female academics utilize ICT tools most often for basic communication, documentation, and teaching support, with less frequent use of advanced data analysis and eresource systems, especially in the state university setting.

H_{01}: There is no significant difference in the level of ICT utilization among women in academics in UNIBEN and AAUA.

To test this hypothesis, the average overall ICT utilization scores of female academics in both universities were compared using an independent samples t-test.

Table 2: Independent Samples t-test of ICT Utilization Between UNIBEN and AAUA

Institution	**Mean Score**	**SD**	**t**	***p*-value**	**Decision**
UNIBEN	3.23	0.46	3.82	0.4920	Not Significant
AAUA	2.94	0.51			

Significance level: $p < 0.05$

Table 2 presents the result of the independent samples t-test used to test Hypothesis 1. The mean score for the overall ICT utilization by women in academics in UNIBEN was 3.23**,** while for AAUA**,** it was 2.94**.** The t-value was 3.82**,** with a corresponding *p-value* of 0.4920. Although the mean score for UNIBEN (3.23) was marginally higher than that of AAUA (2.94), the *p-value* of 0.4920 is well above the 0.05 threshold**,** indicating that the observed difference may have occurred by chance. Consequently, the null hypothesis stating that there is no significant difference in ICT utilization across the two institutions was retained**.**

H_{02}: There is no significant difference in the ICT infrastructures available to women in academics between in UNIBEN and AAUA

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This hypothesis was tested using the independent samples t-test to compare the mean ratings of ICT infrastructure availability between the two universities. The result is presented in Table 3.

Table 3: Data on the Differences in ICT Infrastructure Availability Between UNIBEN and AAUA

ICT Infrastructure	**UNIBEN (Mean Score)**	**AAUA (Mean Score)**	**t-**	***p-value***	**Significance**
Internet Access (Wi-Fi)	4.32	4.11	2.13	0.035	Significant
Personal Desktop/Laptop Access	4.05	3.89	1.77	0.079	Not Significant
Access to E-Journal Databases	4.18	3.74	3.21	0.002	Significant
Access to Projectors/Smartboards	3.91	3.45	2.98	0.004	Significant
ICT Training Centres	3.55	3.38	1.24	0.218	Not Significant

*Significant at $p < 0.05$

Table 3 revealed that there are statistically significant differences in the availability of certain ICT infrastructures between UNIBEN and AAUA: Internet Access, e-Journal Databases, and Presentation Equipment (e.g., projectors, smartboards) are significantly more available in UNIBEN than in AAUA. However, there is no significant difference in access to personal computers and ICT training centres. This shows that institutional support and funding structures, which tend to favour federal universities like UNIBEN, may have influenced the depth and quality of ICT infrastructure provided to academic staff. In contrast, AAUA, as a state institution, appears to be operating with comparatively limited infrastructure. It can however be concluded that there is partial evidence of differences in ICT infrastructure across the two universities.

DISCUSSION OF FINDINGS

The study revealed that both universities' female academic staff engage more frequently with basic and communication-oriented ICT applications such as Microsoft Word, Email, and WhatsApp. These tools ranked highest in both institutions, revealing that documentation, correspondence, and peer-to-student communication remain the primary digital functions integrated into their academic work. This aligns with the submission of Ajayi (2019), who noted that ICT engagement among women in Nigerian universities is largely utilitarian and centered on fundamental operations such as typing, emailing, and file sharing.

The moderate utilization of platforms like Google Scholar and PowerPoint reflects growing awareness and use of scholarly dissemination tools. However, the less frequent usage of advanced ICT tools such as SPSS, online journal databases, and Learning Management Systems points to deeper structural issues. This finding corroborates Aduwa-Ogiegbaen, and Iyamu (2020), who observed that the underutilization of analytical and eresource platforms by female lecturers is often tied to lack of institutional exposure, insufficient training, and inadequate infrastructure support. Interestingly, Learning Management Systems and social media tools ranked among the lowest in both institutions. This suggests that while online learning platforms have become standard in global higher education, their adoption among Nigerian female academics remains minimal. One possible reason is that these platforms require a higher degree of digital literacy and sustained institutional push for integration. Olatokun (2021) highlighted this concern in his evaluation of digital adoption in Nigerian tertiary education, noting that gender disparities in technology use are partly reinforced by uneven exposure to advanced ICT tools and minimal follow-up support for female lecturers after introductory workshops.

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The trend emerging from the data reveals that although female academic staff are increasingly open to using ICT, their engagement remains largely surface-level and restricted to day-to-day administrative and communication tasks. There is limited transition into deeper scholarly applications such as data analytics, academic networking platforms, or interactive e-teaching environments. The findings emphasize the need for institutional strategies that move beyond providing basic ICT access, towards developing structured, gender sensitive training programs that build capacity in more specialized ICT applications.

The study also revealed that the difference in the level of ICT utilization among women in academics between UNIBEN and AAUA is not statistically significant**.** This finding suggests that, despite differences in institutional status (federal versus state) and associated levels of funding and infrastructural support, female academic staff in both universities relatively exhibit similar levels of engagement with ICT tools**.** This may imply that personal interest, motivation, general awareness, and ICT policies may be playing a more unifying role in ICT usage than previously assumed. This result aligns with the observation of Ajayi (2019)**,** who argued that although institutional environments differ, the general trend among women in Nigerian universities shows growing acceptance and usage of ICT tools for teaching, communication, and basic research tasks. He noted that recent national ICT capacity-building initiatives, such as workshops and e-learning platforms, have had a leveling effect across institutions.

In the same vein, Saeed and Farooqi, (2019**)** emphasized that while access to ICT infrastructure may vary, the actual utilization of ICT among female lecturers is often driven more by necessity and individual initiative than by institutional support alone. Her study found that women across various institutions, including state universities, demonstrated increasing confidence in using basic ICT tools for administrative and academic purposes. Furthermore, Olatokun (2021) supports this position, asserting that even in resource-constrained environments, female academics are increasingly leveraging personal devices and internet connectivity to access digital tools. He concluded that digital literacy and proactive self-development are closing the gap that institutional disparities once widened. This finding therefore challenges the assumption that women in state universities are necessarily disadvantaged in ICT usage. Instead, it points to a growing convergence in ICT utilization patterns**,** likely facilitated by broader access to mobile technology, digital resources, and Nigeria's academic culture that now expects basic digital competence from all staff, regardless of institutional type.

It was also established in the study that there are statistically significant differences in the availability of certain ICT infrastructures between the University of Benin (UNIBEN) and Adekunle Ajasin University (AAUA). Specifically, UNIBEN recorded significantly higher mean scores in access to Internet services (WiFi)**,** e-journal databases**,** and presentation equipment (e.g., projectors and smartboards), with *p-values* less than 0.05. Conversely, the differences in personal computer access and ICT training centres were not statistically significant. This result confirms that institutional support and funding play a crucial role in shaping the digital landscape for academic staff. UNIBEN, being a federal institution, benefits from access to central government funding and larger-scale ICT interventions from bodies such as the National Universities Commission (NUC) and TETFund. In contrast, AAUA, a state-owned university, operates under tighter budgetary conditions, which may limit the scope and quality of ICT infrastructure available to staff, particularly women in academics.

These findings echo the conclusions of Olatokun (2017)**,** who emphasized that unequal access to ICT infrastructure across Nigerian universities is primarily a reflection of funding disparity and inconsistent ICT policy implementation. Federal universities, according to her, are better positioned to access grants, deploy infrastructure, and offer sustained technical support to staff. Similarly, Okukpon and Akerele (2020) observed that limited ICT access in state institutions directly affects the ability of female lecturers to incorporate technology into their research and teaching responsibilities. They stressed the importance of context-sensitive policy reforms that address infrastructural inequality, particularly where gender intersects with institutional under-resourcing. Ojo, *et al*, (2023) further argued that the availability of ICT tools does not only depend on procurement but also on the institutional will to maintain, train, and upgrade. He noted that while some universities may acquire digital equipment, its usability among female staff is often undermined by lack of targeted support, erratic power supply, and poor maintenance culture.

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Furthermore, the pattern in the data suggests that, although both universities offer some level of ICT infrastructure, the depth, consistency, and accessibility are markedly better in UNIBEN. These differences have far-reaching implications for how female academic staff engage with digital tools and contribute to scholarship. The study thereby reinforces the need for equitable infrastructure development and sustained investment in ICT access especially for underfunded institutions (Ojo, *et al*, (2023).

CONCLUSION

The study examined the level of ICT utilization and infrastructure availability among women in academics at the University of Benin (UNIBEN) and Adekunle Ajasin University (AAUA). The findings revealed that women in both institutions predominantly use ICT for basic academic tasks such as word processing, emailing, and communication through WhatsApp. Advanced applications like SPSS, online databases, Learning Management Systems (LMS), and social media for academic purposes were less frequently used. Despite these trends, there was no statistically significant difference in the overall level of ICT utilization between the two institutions, suggesting a growing convergence in digital engagement patterns among female lecturers, possibly driven by personal motivation and increasing digital literacy.

However, the study found statistically significant differences in the availability of specific ICT infrastructures**,** with UNIBEN demonstrating higher access to internet services, e-journal databases, and digital presentation tools. These disparities are likely linked to differences in funding, institutional policy, and federal versus state university status. The study concludes that while ICT usage levels may appear similar, infrastructural inequalities persist and must be addressed to ensure equitable access and support for all female academics across different institutions

Based on the findings of the study, it was concluded that women in academics across the University of Benin (UNIBEN) and Adekunle Ajasin University (AAUA) primarily engage with ICT for basic academic functions such as document preparation, communication, and teaching support. Applications like Microsoft Word, Email, and WhatsApp were the most frequently used tools, while more advanced academic tools such as SPSS, Learning Management Systems, and online journal databases were less commonly utilized. This pattern reflects a limited but functional engagement with ICT, driven largely by necessity and accessibility. The study therefore concludes that while female academic staff in both institutions are increasingly adopting ICT tools, their engagement remains largely at a foundational level and is influenced by personal drive or interest as well as infrastructural availability. There is therefore a need to bridge the gap in ICT infrastructure and strengthen the support systems for women in academics as this is critical to enhance their productivity, promote equity, and foster digital inclusion in Nigerian higher education

RECOMMENDATIONS

The following recommendations are hereby made based on the findings from this study:

1. Universities should establish gender-sensitive ICT training programs designed specifically for female academic staff. These training sessions should focus on practical skills such as using SPSS for data analysis, navigating online databases, engaging with Learning Management Systems, and managing academic resources via platforms like Google Scholar. To ensure effectiveness, institutions can collaborate with experienced facilitators, non-governmental organizations, or technology education centers such as W.TEC (Women's Technology Empowerment Centre), to offer recurring workshops and structured mentoring support.

2. There is also an urgent need to improve access to academic databases and e-resources. University libraries should proactively subscribe to well-known scholarly repositories like JSTOR, AJOL, and ScienceDirect, and ensure that female lecturers can access these resources both on and off campus. This can be achieved by investing in digital library infrastructure and leveraging national initiatives like the TETFund e-library consortium to reduce costs through shared licensing models.

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3. To address the issue of inadequate access to computing devices, institutions should introduce laptop loan or subsidy schemes for lecturers, particularly female academics. Universities can partner with hardware companies or use internal development funds to create affordable acquisition plans. This could take the form of interest-free repayment plans or partially subsidized device purchase programs, thus enabling more women to own and use personal computers for academic purposes. Furthermore, university ICT policies must be revised to reflect a gender-inclusive framework. Institutional policies should contain specific clauses that guarantee equal access to digital tools, training opportunities, and flexible work arrangements for women, especially those with childcare responsibilities. University senates and ICT boards should conduct inclusive policy reviews that incorporate feedback from female staff to ensure relevance and equity.

4. Universities in Nigeria should identify digitally proficient female staff and create informal support circles or "Women in ICT" groups within faculties. These groups can meet periodically to exchange strategies, troubleshoot common problems, and build confidence among colleagues who are less experienced with digital platforms.

REFERENCES

1. Adelabu, M. A., & Adu, E. T. (2019). The use of ICT in teaching and learning: A theoretical perspective. In J. Daniel (Ed.), Information and Communication Technology and Education. Ibadan: Greenfield Publishers.
2. Aduwa-Ogiegbaen, S. E., & Iyamu, E. O. S. (2020). Using information and communication technology in secondary schools in Nigeria: Problems and prospects. Educational Technology & Society, 8(1), 104–112.
3. Davis, F. D. (2019). Technology acceptance model for empirical testing of user behavior. MIS Quarterly, 27(3), 319–340.
4. Gurumurthy, A. (2021). Gender and ICT: Overview report. Institute of Development Studies, University of Sussex.
5. Hafkin, N. (2018). Gender issues in ICT policy in developing countries: An overview. In UN DAW Expert Group Meeting on Information and Communication Technologies and Their Impact on and Use as an Instrument for the Advancement and Empowerment of Women (pp. 1–9). Seoul, Republic of Korea.
6. Khyade, V. B. (2022). Information and communication technology (ICT): A tool for educational development. International Journal of Educational Studies, 5(3), 47–58.
7. Ojo, B., Odunlade, R. O., & Adekanye, T. O. (2023). ICT access and research productivity among academic staff in Nigerian universities. International Journal of Information and Communication Technology Education, 11(3), 61–70.
8. Okukpon, L. A., & Akerele, M. O. (2015). Bridging the digital divide: ICT engagement of female lecturers in Nigerian universities. Nigerian Journal of Educational Technology, 5(2), 89–101.
9. Okukpon, L. A., & Akerele, M. O. (2020). Digital inequality in Nigerian universities: A gendered perspective. Nigerian Journal of Educational Studies, 18(1), 115–130.
10. Olatokun, W. M. (2021). ICT policy and gender equity in Nigerian higher education. Journal of Information Policy, 5, 23–45.
11. Rogers, E. M. (2011). Diffusion of innovations (5th ed.). New York, NY: Free Press.
12. Saeed, M. A., & Farooqi, Y. A. (2019). Work-life balance and ICT adoption among female academics in Nigeria. International Journal of Gender Studies in Developing Societies, 1(2), 34–48.
13. UNESCO. (2015). Final report of the World Summit on the Information Society (WSIS). Paris: United Nations Educational, Scientific and Cultural Organization.
14. UNESCO. (2020). Gender-sensitive education and ICT: A policy brief. Paris: UNESCO.
15. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2018). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425–478