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CHALLENGES ASSOCIATED WITH UTILIZATION OF LIBRARY ONLINE DATABASES FOR RESEARCH PRODUCTIVITY AMONG POSTGRADUATE STUDENTS OF FACULTY OF EDUCATION IN UNIVERSITIES IN NORTH-CENTRAL, NIGERIA.

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Abstract

This study investigated the challenges associated with the utilization of library online databases for enhanced research output among postgraduate students of the Faculty of Education in Universities in North Central Nigeria, hence the paper was guided by one specific objective. A descriptive survey research design was adopted, with data collected from 343 postgraduate students across eight universities using cluster 5 of the Utilization of University Library Online Databases Questionnaire (UULODQ) adapted from Ubagu (2025), comprising 15 items rated on a four-point scale. Mean, standard deviation, and paired-sample t-test ($p \leq 0.05$) were used for analysis. Findings revealed that all 15 challenge items were agreed upon by respondents, with mean scores ranging from 3.06 to 3.57. The most critical challenges identified were incessant power outage, slow internet connectivity and retrieval speed, lack of user/ICT skills, problem of restricted access to some databases, and lack of sustained subscription of those library databases. The null hypothesis of no significant difference between state and federal university students on the challenges experienced was accepted ($t = -1.21$, $df = 341$, $p = 0.23$), indicating that these challenges are pervasive across all institutional types in the region. The study concludes that infrastructural, institutional, and skills-related barriers collectively constrain postgraduate students' ability to effectively

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utilize library online databases, and recommends a comprehensive, multi-stakeholder response to address these challenges.

Keywords: Utilization, Libraryonline databases, Postgraduate students, Research output.

Introduction

The provision of library online databases to postgraduate students in Nigerian universities represents a significant institutional commitment to research quality enhancement. According to Chima (2022), online databases are digital collections of organized information that facilitate access to academic resources, including books, journals, theses, and multimedia content, through search and retrieval systems. With the advent of information technology, libraries have embraced e-resources, including e-books, e-journals, databases, and institutional repositories, to meet the evolving needs of users (Smith & Jones, 2020).These databases when fully accessed and actively used offer current, peer-reviewed information across a wide range of academic disciplines, empowering postgraduate researchers to situate their work within robust theoretical and empirical traditions. However, the gap between the theoretical potential of library online databases and their practical utility in the everyday research activities of postgraduate students is well-documented across the sub-Saharan African higher education literature. As libraries continue to adapt to the digital age, their capacity to offer seamless access to information has positioned them as indispensable in academia and beyond (Taylor & Johnson, 2022).

Despite substantial growth in digital scholarly resources worldwide, access inequalities continue to affect many developing countries. Indigenous universities, in particular, operate

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within a complex environment of structural and institutional constraints that fundamentally shape the conditions under which postgraduate students can access and use online databases, despite growing institutional investment in library online databases across Nigerian universities.

In Nigeria, increasing enrolment in postgraduate programmes has intensified demand for electronic resources. However, many university libraries face budgetary limitations that hinder the acquisition and maintenance of subscriptions to major scholarly databases. Consequently, researchers often experience interruptions in access, incomplete collections, or restricted availability of required scholarly materials. These limitations can negatively affect research efficiency, publication output, and the overall quality of postgraduate research (Nwalo& Aina, 2023).

This study addresses this imperative by systematically investigating the challenges associated with utilization of library online databases for research productivity among postgraduate students of Faculty of Education in Universities in North Central Nigeria. By providing a comprehensive empirical account of these challenges and testing whether they are experienced differently by students in state and federal universities, the study contributes actionable evidence to support library policy and practice in the region.

Research Question

What are the challenges associated with effective utilization of library online databases for research productivity among postgraduate students of Faculty of Education in Universities in North Central Nigeria?

Hypothesis

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One null hypothesis (H_0) was tested at 0.05 level of significance in the study.

H_0: There is no significant difference in the mean ratings of postgraduate students in state and federal universities on the challenges associated with utilizing library online databases for research productivity.

Literature Review

Theoretical Framework

This paper is anchored on the Technology Acceptance Model (TAM) by Fred Davis (1989) and the Information Utilization Capacity Theory (IUCT) by Emillia Curras (1987). TAM posits that perceived ease of use is a primary determinant of technology adoption: when users encounter significant challenges in using a technology such as slow connectivity, restricted access, or complex interfaces their perception of ease of use is diminished, and their likelihood of sustained use decreases accordingly. The IUCT further posits that an individual's capacity to process and use information is a critical determinant of optimal research performance; challenges that reduce this capacity such as lack of ICT skills, insufficient training, and unreliable access directly undermine research output quality. Together, these frameworks locate the challenges identified in this paper within a broader theoretical context of information utilization and technology acceptance.

Challenges Associated with Library Online Database Utilization

Challenges associated with online database utilization refer to barriers that hinder effective access, retrieval, evaluation, and use of electronic scholarly resources. These barriers may be infrastructural, technological, institutional, financial, or user-related.

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Infrastructure-related challenges remain among the most significant obstacles to effective database utilization in developing countries. Reliable electricity supply and stable internet connectivity are essential requirements for accessing electronic resources. Frequent power outages and low bandwidth can interrupt database sessions;delay downloads discourages regular usage (IFLA, 2024).

Institutional barriers include inadequate funding, subscription discontinuity, limited staff support, and insufficient user education programmes. Libraries that lack sustainable funding mechanisms often struggle to maintain access to premium databases, leading to access restrictions and reduced resource availability. User-related barriers such as inadequate digital literacy, poor search skills, and limited awareness of available databases further reduce effective utilization(Tenopir et al., 2023).

Chima and Nwokocha (2013), conducting an empirical study of motivation, challenges and strategies in the use of electronic information resources by postgraduate library users in South- east Nigerian Federal Universities found that the strategies to improve motivation to use of electronic information resources include among others: Increase ICT infrastructure/facilities, stable electrical backup and constant Information Literacy Training for users. Akpohonor and Akpojotor (2016), studying postgraduate Library and Information Science students in Southern Nigeria, identified epileptic power supply, information overload, poor internet connectivity, high access costs, difficulty in accessing resources, and download delays as the primary challenges affecting electronic resource use.

Adeleke and Nwalo (2017), examining postgraduate students at the University of Ibadan, found that interrupted power supply ranked highest among constraints to electronic

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resource use, followed by inadequate computer capacity, poor search precision and recall, lack of search skills, and problems accessing the internet. Similarly, Ugwu and Orsu (2017) found that the most significant direct challenges to online information use included low internet bandwidth, lack of browsing skills, and insufficient ICT infrastructure, while indirect challenges included lack of internet access at home, absence of online assignments, and lack of motivation.

Ngessa (2018) surveyed 559 students and 149 academic staff across 12 higher education institutions in Tanzania and found that despite the relatively common use of databases such as Wiley Online Library, Google Scholar, ScienceDirect, and JSTOR, access levels were very low particularly among students due to internal challenges (slow internet, difficulty of use, poor support) and external challenges (unavailability of specific databases). These findings from Tanzania are closely paralleled by the present study's findings in North Central Nigeria.

Okogwu and Mole (2019) surveyed postgraduate library users in Southeast Nigerian university libraries and found that the challenges most affecting electronic resource access included slow internet connectivity, lack of perpetual access, irregular power supply, loss of access due to cancelled subscriptions, information overload, non-availability of relevant e-resources, and the complexity of e-resource interfaces. The finding that lack of perpetual access ranked highest (M = 3.18) points to subscription sustainability as a primary institutional challenge—one that directly mirrors the 'lack of sustained subscription' identified as a major challenge in the present study.

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The above review demonstrates that although library online databases have become indispensable tools for academic research, their effective utilization continues to be constrained by a range of infrastructural, institutional, technological, and user-related challenges. This gap necessitates the focus of this present paper, which seeks to provide empirical evidence on the challenges associated with utilizing library online databases for research productivity among postgraduate students of faculty of Education in Universities in North Central Nigeria and to determine whether these challenges differ across state and federal universities in the region.

Research Methodology

This study adopted a descriptive survey research design. The design was considered suitable because it enabled the researcher to obtain information directly from postgraduate students of the faculties of Education concerning the challenges associated with the utilization of library online databases for research productivity. The population comprised 3,390 postgraduate students drawn from eight universities in North Central Nigeria. The universities consisted of both federal and state institutions offering postgraduate programmes in the Faculty of Education. Data were collected using Cluster 5 of the Utilization of University Library Online Databases Questionnaire (UULODQ) adapted from Ubagu (2025). The cluster contained 15 items measuring the challenges of library online database use, rated on a four-point Strongly Agree (SA = 4), Agree (A = 3), Disagree (D = 2), Strongly Disagree (SD = 1) scale, was used for data collection relevant to this study. A total of 343 valid questionnaire responses were obtained using purposive and disproportionate stratified random sampling. The Cronbach alpha reliability coefficient for Cluster 5 was 0.90, confirming the internal consistency of the

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instrument. The data collected were analyzed using mean and standard deviation to answer the research objective. A criterion mean of 2.50 was used to determine whether an item was an accepted challenge. The null hypothesis was tested using a paired-sample t-test at the 0.05 level of significance.

Results and Discussion

Challenges associated with Library Online Database Utilization

Research Question: What are the challenges associated with utilization of library online databases for research productivity among postgraduate students of Faculty of Education in Universities in North Central Nigeria?

Table 1: Mean and Standard Deviation of Respondents on Challenges Associated with Utilizing Library Online Databases for Research productivity (N = 343)

S/N	Item Statement (N=343)	$\bar{x}$	SD	Remark
1	Incessant power outage.	3.57	0.69	Agree
2	Slow internet connectivity/retrieval speed.	3.50	0.69	Agree
3	Displaying of huge irrelevant information.	3.23	0.81	Agree
4	Non-supportive library staff for aiding students on online database use.	3.20	0.77	Agree
5	Lack of awareness about online databases.	3.25	0.81	Agree
6	Lack of sustained subscription of online databases.	3.34	0.71	Agree
7	Difficulty in searching required/relevant information from online databases.	3.13	0.82	Agree
8	Problem of restricted access on some online databases.	3.35	0.70	Agree
9	Lack of training/orientation programmes on online database usage.	3.33	0.72	Agree
10	Lack of user/ICT skills for use of online databases.	3.43	0.67	Agree
11	Lack of knowledge of different types of online databases for different information needs.	3.39	0.64	Agree

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S/N	Item Statement (N=343)	$\bar{x}$	SD	Remark
12	Non-functional passwords.	3.06	0.80	Agree
13	When no remote/off-campus access is possible.	3.13	0.82	Agree
14	Lack of well-equipped information centers accessible to researchers.	3.33	0.73	Agree
15	Lack of user survey/feedback regarding awareness and usability of online databases.	3.26	0.68	Agree

Key: $\bar{x} \geq 2.50$ = Agree (A); $\bar{x}$=Mean < 2.50 = Disagree (D). SD = Standard Deviation.

Table 1 shows that all 15 challenge items recorded mean responses ranging from 3.06 to 3.57, all exceeding the criterion mean of 2.50. The item 'Incessant power outage' recorded the highest mean (M = 3.57, SD = 0.69), followed by "Slow internet connectivity/retrieval speed' (M = 3.50, SD = 0.69), 'Lack of user/ICT skills for use of online databases' (M = 3.43, SD = 0.67), 'Problem of restricted access on some online databases' (M = 3.35, SD = 0.70), and 'Lack of sustained subscription of online databases' (M = 3.34, SD = 0.71). The challenge that recorded the lowest mean was 'Non-functional passwords' (M = 3.06, SD = 0.80), though this too exceeded the acceptance threshold. The narrow standard deviation range (0.64–0.82) indicates strong consensus among respondents on all challenge items.

Test of Hypothesis

H_{01}: There is no significant difference in the mean ratings of postgraduate students in state and federal universities on the challenges associated with utilizing library online databases for research productivity.

Table 2: t-test Analysis of Mean Ratings of Postgraduate Students in State and Federal Universities on Challenges of Online Database Utilization

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University Type	N	Mean	SD	t-value	Df	Sig. value	Decision
State	115	3.52	0.41	-1.42	341	0.23	NS
Federal	228	3.57	0.40				

Note: α = 0.05; NS = Not Significant; df = Degrees of Freedom.

Table 2 shows a t-value of -1.42 (df = 341, p = 0.23). Since p = 0.23 exceeds the 0.05 significance level, the null hypothesis is accepted: there is no significant difference in the mean ratings of postgraduate students in state and federal universities on the challenges associated with utilizing library online databases for research productivity. Students in both state (M = 3.52, SD = 0.41) and federal (M = 3.57, SD = 0.40) universities reported essentially identical challenge profiles.

The finding in Table 1 that all 15 challenge items were unanimously and strongly agreed upon by respondents reflects the pervasive and multidimensional nature of the barriers postgraduate students face in utilizing library online databases in North Central Nigeria. The primacy of incessant power outage (M = 3.57) is consistent with the broader Nigerian and African higher education literature. Adeleke and Nwalo (2017) similarly found interrupted power supply to be the highest-ranked constraint to electronic resource use at the University of Ibadan, while Akpohonor and Akpojotor (2016) identified epileptic power supply as the leading challenge confronting postgraduate Library and Information Science students in Southern Nigeria. These converging findings underscore that unreliable electricity supply is a structural, nationwide challenge with direct consequences for online database access, requiring systemic rather than purely institutional solutions.

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Slow internet connectivity (M = 3.50) as the second-highest rated challenge aligns with Ngessa (2018), who found slow internet connection to be one of the primary internal challenges limiting database access in Tanzanian HEIs, and with Ugwu and Orsu (2017), who identified low internet bandwidth as the most significant direct challenge facing undergraduate students at the University of Nigeria, Nsukka. The co-occurrence of power outage and slow internet as the two most critical challenges reflects the infrastructure deficit that characterizes many Nigerian public universities, where the provision of stable ICT infrastructure has consistently lagged behind the pace of database subscription expansion.

The high endorsement of lack of ICT skills (M = 3.43) as a challenge mirrors findings from Ugwu and Orsu (2017), who identified lack of browsing skills as both a direct and indirect challenge, and is consistent with Omotunde and Ajie (2017), who found that many library and information science professionals had limited computer skills and had not received formal ICT training. This skills deficit points to a gap between the competencies required for effective database use and those that postgraduate students actually bring to their library interactions—a gap that user education and library instruction programmes are specifically designed to address.

The identification of restricted access to some databases (M = 3.35) and lack of sustained subscription (M = 3.34) as major challenges points to systemic institutional and financial failures that require policy-level intervention. Okogwu and Mole (2019) similarly ranked lack of perpetual access related to subscription cancellation as the highest challenge facing electronic resource users in Southeast Nigerian universities, confirming that subscription sustainability is a persistent vulnerability in Nigerian academic library database

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provision. The challenge of non-functional passwords (M = 3.06), though lowest-rated, reflects a technical support and system management issue that, while more tractable than infrastructural challenges, still requires institutional attention.

The acceptance of the null hypothesis as presented in Table 2 confirms that these challenges are experienced with comparable intensity by postgraduate students in both state and federal universities. This finding has an important policy implication: it demonstrates that the challenges are systemic across the institutional landscape of North Central Nigeria, not confined to less-resourced state institutions. Even federal universities which generally command larger budgets and better infrastructure cannot insulate their postgraduate students from the challenges of power outage, slow internet, and lapsed subscriptions. This systemic character demands a coordinated response at the level of national policy and inter-institutional collaboration, rather than ad hoc institution-level fixes.

Conclusion

This study established that postgraduate students of the Faculty of Education in Universities in North Central Nigeria encounter a comprehensive and uniformly experienced set of challenges in utilizing library online databases. Spanning infrastructural barriers (power outage, slow internet), institutional failures (lapsed subscriptions, restricted access, non-functional passwords), human resource deficiencies (non-supportive staff), and individual skill limitations (lack of ICT and search skills). These challenges are experienced with no significant difference between state and federal university students, indicating their systemic character across the institutional landscape of the region.

Recommendations

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The following recommendations were made:

- Federal and state governments should invest in reliable and sustainable power infrastructure for universities, including solar energy and independent power generation solutions for library and ICT facilities.
- University management should prioritize internet bandwidth upgrades in library spaces and ensure that postgraduate students have reliable high-speed connectivity for research activities.
- Institutions should establish and sustain database subscription budgets, exploring consortia procurement arrangements to reduce costs and prevent access lapses.
- University libraries should deliver regular, structured ICT and information literacy training programmes for postgraduate students, addressing both foundational digital skills and advanced database search strategies.
- Library management should assign dedicated, trained staff to support postgraduate database users, ensure that access credentials are functional and updated, and provide off-campus remote access solutions.
- The National Universities Commission should develop and enforce minimum standards for library ICT infrastructure and database access provision in Nigerian universities, with periodic performance audits.

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