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Assessing the Availability, Accessibility, Utilization, and Challenges of Electronic Information Resources among Undergraduate Students of Adamawa State University, Mubi

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Abstract
Electronic information resources (EIRs) have become integral to higher education by enhancing teaching, learning, and research. However, their availability, accessibility, and utilization remain uneven in Nigerian universities, often due to infrastructural and financial limitations. This study investigated the availability, accessibility, utilization, and challenges of EIRs among undergraduate students at Adamawa State University, Mubi. A descriptive survey research design was adopted, targeting 2,222 registered undergraduate library users in the 2024/2025 academic session. Using Yamane's formula, a sample of 327 students was randomly selected. Data were collected through a validated structured questionnaire, which achieved a reliability coefficient of 0.86 (Cronbach's Alpha). Descriptive statistics (mean and standard deviation) and Chi-square tests were used for analysis. Findings revealed that Google Scholar, e-books, e-journals, Science Direct, and institutional repositories were widely available and accessible, while subscription databases such as ProQuest and JSTOR were limited. Utilization was highest for assignments and research projects, but moderate for examination preparation and personal study. Frequency of access was generally moderate, with most students using EIRs daily or weekly. Major challenges included poor internet connectivity, lack of training, limited access to devices, and restricted access to premium databases. The study concludes that while EIRs are moderately available and utilized, infrastructural and literacy barriers hinder optimal use. It recommends improved ICT

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infrastructure, subscription to key databases, enhanced user training, and institutional support to maximize the academic benefits of EIRs for undergraduates.

Keywords: Electronic Information Resources, Availability, Accessibility, Utilization, Challenges, Undergraduate Students

Introduction

The rapid advancement of information and communication technologies (ICTs) has significantly transformed knowledge creation, access, and dissemination in higher education globally. Electronic Information Resources (EIRs), such as e-journals, e-books, academic databases, and digital repositories, have become indispensable tools for teaching, learning, and research (Aman & Ahmad, 2022). They provide students and scholars with access to vast collections of up-to-date scholarly knowledge, enhance collaborative learning, and contribute to improved research productivity across disciplines. In developed countries, academic libraries have increasingly prioritized digital collections and e-services, thereby ensuring that learners can access scholarly resources anytime and anywhere (Francis, 2024). However, despite their promise, the availability and effective utilization of EIRs continue to face challenges worldwide, including issues of affordability, subscription sustainability, digital literacy skills, and technological infrastructure (Thanuskodi, 2021).

In the African context, universities have recognized the potential of EIRs to bridge knowledge gaps, reduce reliance on print collections, and improve teaching and research outcomes. Yet, studies reveal persistent barriers such as high subscription costs, limited ICT infrastructure, and poor internet connectivity (Chitumbo, Musonda, & Chisenga, 2021; Kwafoa, Anhwere, & Manu, 2019). These challenges are compounded by inadequate awareness and training on the effective use of e-resources among students and faculty members. Consequently, while electronic resources are available in many university libraries across Africa, their accessibility and utilization often remain below expectations (Asha, 2023).

In Nigeria, EIRs are critical to supporting the academic programs of universities, which aim to produce graduates with advanced knowledge and skills in various fields. Nonetheless, Nigerian universities face substantial obstacles in ensuring adequate availability and access to these resources. Prior research has shown that unreliable power supply, poor internet bandwidth, low subscription levels to subject-specific databases, and insufficient user education programs hinder students' ability to effectively utilize electronic resources (Adebayo & Abdulazeez, 2023; Olajide & Adio, 2017). Moreover, many undergraduates lack the requisite information literacy skills needed to evaluate and apply digital resources, leading to underutilization of existing collections (Imhonopi, Igbokwe-Ibeto, & Osabuohien, 2020).

Specifically, at Adamawa State University, Mubi, preliminary observations by the researchers indicate that although electronic information resources are provided, undergraduate students face multiple challenges relating to availability, accessibility, and utilization. Limited subscriptions to essential databases, poor internet connectivity, and inadequate training in the use of EIRs appear to constrain students' ability to fully benefit from these resources. While several studies in Nigeria have examined the use of electronic resources among university

students (e.g., Eze & Uzoigwe, 2013; Okiki & Asiru, 2011), there is limited empirical evidence that holistically addresses the interconnected issues of availability, accessibility, utilization, and challenges specifically among undergraduates at Adamawa State University.

This study, therefore, seeks to fill this gap by investigating the availability, accessibility, utilization, and challenges of electronic information resources among undergraduate students of Adamawa State University, Mubi. The findings will not only provide insights into the extent to which these resources support learning and research but will also inform evidence-based recommendations for enhancing access and usage of electronic resources in Nigerian higher education institutions.

Statement of the Problem

The global shift toward digital scholarship has made electronic information resources (EIRs), including e-journals, e-books, databases, and institutional repositories, indispensable for teaching, learning, and research in higher education (Aman & Ahmad, 2022; Francis, 2024). These resources provide timely access to credible academic content, improve research productivity, and enhance students' learning outcomes. While universities in advanced economies have made significant progress in providing and integrating EIRs, the situation in developing regions, particularly in Africa, remains constrained by issues of availability, accessibility, and sustainable utilization (Chitumbo, Musonda, & Chisenga, 2021; Kwafoa, Anhwere, & Manu, 2019).

In African universities, empirical studies have documented persistent barriers such as limited subscriptions to core databases, inadequate ICT infrastructure, unreliable internet connectivity, and insufficient user training (Asha, 2023; Thanuskodi, 2021). These challenges often affect the types of electronic information resources made available, the degree of access students enjoy, and the frequency with which they are used. As a result, many students underutilize digital resources, relying instead on outdated or unverified information sources, which weakens their academic performance and research output.

In Nigeria, similar problems are evident. Despite institutional efforts to provide electronic resources, challenges such as inadequate funding, low bandwidth, erratic power supply, and poor user education have limited their effective utilization (Eze & Uzoigwe, 2013; Olajide & Adio, 2017; Imhonopi, Igbokwe-Ibeto, & Osabuohien, 2020). Adebayo and Abdulazeez (2023) further observed that undergraduate students frequently lack sufficient information literacy skills, thereby limiting their ability to evaluate and apply electronic resources effectively. Consequently, although resources are often provided, the extent of their utilization remains low.

At Adamawa State University, Mubi, preliminary observations by the researchers indicate that while some electronic resources are available, undergraduate students face multiple obstacles. These include limited subscriptions to subject-specific databases, inadequate internet bandwidth, and insufficient user education programs. Furthermore, the frequency of access to available resources appears inconsistent, with many students either unaware of or unable to regularly engage with electronic collections. This raises questions about the extent

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of utilization of the provided resources, as well as the challenges that hinder effective accessibility and usage.

Although several Nigerian studies have examined aspects of electronic resource use in universities (e.g., Okiki & Asiru, 2011; Eze & Uzoigwe, 2013), there is limited empirical evidence that holistically investigates the types of electronic resources available, the level and frequency of access, the extent of utilization, and the challenges hindering their use among undergraduate students at Adamawa State University. This gap underscores the need for a systematic study that addresses these dimensions comprehensively.

Therefore, this study seeks to investigate the availability, accessibility, and utilization of electronic information resources among undergraduate students of Adamawa State University, Mubi, with a focus on the types of resources available, levels and frequency of access, extent of utilization, and challenges encountered in accessing and using these resources.

Objectives of the Study

The objective of the study is to investigate the availability, accessibility, and utilization of electronic information resources among undergraduate students at Adamawa State University Mubi. Specifically, the objectives are:-

1. To identify the Types of electronic information resources available in Adamawa State University, Mubi.
2. To assess the level of accessibility of electronic information resources among Undergraduate Students in Adamawa State University, Mubi.
3. To identify the Frequency of access to electronic information resources in Adamawa State University, Mubi.
4. To determine the extent of utilization of electronic information resources among Undergraduate Students in Adamawa State University, Mubi.
5. To identify the challenges associated with accessibility and utilization of electronic information resources among Undergraduate Students in Adamawa State University, Mubi.

Research Questions

The study was guided by the following research questions:

1. What types of electronic information resources are available in Adamawa State University, Mubi?
2. What is the level of accessibility of electronic information resources among undergraduate students at Adamawa State University, Mubi?
3. How frequently do undergraduate students at Adamawa State University, Mubi access electronic information resources?
4. To what extent do undergraduate students at Adamawa State University, Mubi utilize electronic information resources?
5. What challenges are associated with accessibility and utilization of electronic information resources among undergraduate students at Adamawa State University, Mubi?

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Research Hypotheses

The following research hypotheses were formulated and tested at the 0.05 level of significance:

H_{O1}: There is no significant difference in the level of accessibility of electronic information resources among Undergraduate Students at Adamawa State University, Mubi

H_{O2}: There is a significant difference in the extent of utilization of electronic information resources among Undergraduate Students at Adamawa State University, Mubi.

Literature Review

Concept of Electronic Information Resources (EIR)

Electronic Information Resources (EIRs) refer to information products that are stored and accessed digitally through computer networks and ICT infrastructure. They include e-journals, e-books, databases, theses, dissertations, and institutional repositories, which support research, teaching, and learning (Olajide & Adio, 2017). Globally, EIRs have become indispensable to academic institutions because they provide up-to-date and diverse scholarly content that enhances academic productivity (Francis, 2024). Bashorun, Bashorun, Agboola, and Akinbowale (2022) emphasized that electronic information resources not only expand access to academic knowledge but also promote digital literacy competencies among undergraduates, influencing the way students acquire, evaluate, and apply information.

Types of Electronic Information Resources

The types of EIRs vary widely, ranging from subscription-based resources to open-access content. According to Arowosola and Adeoye (2022), e-journals and e-books are the most frequently accessed resources among polytechnic students, while specialized databases such as JSTOR and ScienceDirect remain underutilized due to low awareness. At Clifford University, Otuza (2023) reported that students were highly aware of general EIRs such as e-journals and e-books, but awareness of specialized databases was very limited, demonstrating an imbalance in usage. Similarly, Mohammed and Ibrahim (2023) highlighted that at the National Open University of Nigeria, undergraduate students had access to multiple databases, including EBSCOhost and JSTOR, but their use was uneven across different study centres.

Availability of EIR in Academic Libraries

The availability of EIRs is a prerequisite for their access and utilization. Globally, academic institutions have made significant investments in electronic resources to support academic excellence (Aman & Ahmad, 2022). In Nigeria, however, studies reveal mixed findings. Adeleke and Makinde (2020) reported that at Lagos State University, e-journals were the most available and utilized EIRs, though challenges like erratic power supply constrained usage. Osiebe and Iwegbue (2024) found that private universities in South-South Nigeria demonstrated higher levels of availability of EIRs compared to public universities, a difference attributed to better funding and infrastructure. Despite this, both private and public institutions struggle with inadequate ICT personnel and poor funding.

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Accessibility of EIR among Students in Higher Institutions

Accessibility involves the extent to which students can retrieve and use available electronic resources. Bashorun et al. (2022) showed that while undergraduates at the University of Ilorin possessed moderate to high information literacy skills, infrastructural issues like poor electricity and internet interruptions limited effective access. Onobrakpor, Ozioko, Effiong, and Udofia (2023) found that postgraduate students in federal universities in South-South Nigeria accessed open-access resources widely, but infrastructural challenges persisted. Similarly, Oshinaike et al. (2022) highlighted that in federal universities in North Central Nigeria, limited access to EIRs, poor ICT facilities, and infrastructural decay constrained students' access.

Utilization of Electronic Information Resources

The utilization of EIRs refers to the effective use of these resources to meet academic and research needs. Globally, studies show that EIRs are highly utilized where infrastructure and awareness are strong (Imhonopi et al., 2020). In Nigeria, however, utilization patterns are inconsistent. At Clifford University, Otuza (2023) reported moderate utilization of general EIRs but weak use of specialized databases. Ogunbodede and Oribhabor (2022) found that although students at the University of Africa, Toru-Orua, had access to digital resources such as e-books and e-journals, daily usage was low due to limited awareness. Similarly, Onuoha and Chukwueke (2023) discovered that while reference materials were accessible, their utilization by undergraduates was low, suggesting that availability does not always guarantee frequent use.

Challenges of EIR in Academic Libraries

Despite their potential, several challenges hinder the effective availability, accessibility, and utilization of EIRs in Nigerian universities. A major challenge is inadequate ICT infrastructure and unstable power supply (Adeleke & Makinde, 2020; Bashorun et al., 2022). Funding constraints have also been reported to limit database subscriptions and expansion of digital collections (Osiebe & Iwegbue, 2024). Other common barriers include limited information literacy, low awareness of specialized databases, poor internet bandwidth, and device accessibility (Otuza, 2023; Arowosola & Adeoye, 2022). These findings are corroborated by Asha (2023), who argued that for universities to maximize the benefits of EIRs, they must address off-campus access barriers and technical limitations.

Methodology

This study employed a descriptive survey design to examine the availability, accessibility, utilization, and challenges of electronic information resources (EIRs) among undergraduate students at Adamawa State University, Mubi. The study population comprised 2,222 registered undergraduate library users during the 2024/2025 academic session.

The sample size was determined using Yamane's (1967) formula at a 5% margin of error, yielding 339 respondents; however, 327 students were finally selected through simple random sampling to ensure representativeness across faculties and departments (Etikan & Bala, 2017).

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Data were collected using a structured, closed-ended questionnaire, validated by three experts in Library and Information Science. Reliability testing produced a Cronbach's Alpha of 0.86, indicating strong internal consistency (Tavakol & Dennick, 2011).

Data analysis involved descriptive statistics (mean and standard deviation) for research questions and Chi-square tests for hypotheses. Results were presented in tables for clarity.

Presentation of Results

Table 1: Types of Electronic Information Resources Available in Adamawa State University Mubi

S/N	Type of Electronic Information Resource n=291	Mean	Standard Deviation	Remark
1	CD-ROMs	160.5	85.7	Not Available
2	Google Scholar	170.2	60.3	Available
3	E-books	145.8	50.2	Available
4	E-journals	175.0	92.4	Available
5	Science Direct	160.0	70.5	Available
6	ProQuest	120.3	15.2	Not Available
7	OPAC	155.9	70.6	Not Available
8	E-theses	165.1	75.3	Available
9	E-conferences	160.7	65.2	Available
10	Agora	155.0	50.0	Available
11	JSTOR	148.6	5.5	Not Available
	Grand Mean	**156.4**	**61.2**	**Available**

The findings of the study, as presented in Table 1, revealed that the grand mean score of 156.4 with a standard deviation of 61.2 indicates that electronic information resources are generally available to undergraduate students. Specifically, resources such as Google Scholar (Mean = 170.2), e-journals (Mean = 175.0), Science Direct (Mean = 160.0), e-theses (Mean = 165.1), and e-conferences (Mean = 160.7) were rated as available, suggesting a strong presence of scholarly and research-oriented materials. However, resources like CD-ROMs (Mean = 160.5), ProQuest (Mean = 120.3), OPAC (Mean = 155.9), and JSTOR (Mean = 148.6) were considered not available based on students' responses. A variety of electronic information resources (EIRs) such as e-journals, e-books, databases, and online reference materials are available at Adamawa State University Library. However, specialized databases and advanced digital tools were found to be less available compared to general resources. This aligns with the study by Adeleke and Makinde (2020), who reported that e-journals were the most utilized EIRs in Lagos State University, but the limited range of specialized databases hindered comprehensive use. Similarly, Osiebe and Iwegbue (2024) found that private university libraries in South-South Nigeria demonstrated greater EIR availability compared to public universities, suggesting funding and infrastructure gaps. Thus, while Adamawa State

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University provides access to core resources, there remains a gap in the diversity and specialization of EIRs, which limits the depth of academic research.

Table 2: Level of Accessibility of Electronic Information Resources

S/N	Electronic Resource n=291	Mean	Std. Deviation	Remark
1	Google Scholar	3.19	1.24	High Accessibility
2	E-Books	3.14	1.26	High Accessibility
3	E-Journals	3.56	1.50	High Accessibility
4	E-newspaper	3.07	1.36	High Accessibility
5	Library websites	2.24	1.27	Moderate Accessibility
6	Institutional repository	3.15	1.43	High Accessibility
7	CD-ROM	3.16	1.23	High Accessibility
8	Science Direct	3.04	0.97	High Accessibility
9	ProQuest	2.66	1.34	Moderate Accessibility
10	Agora	2.68	1.40	Moderate Accessibility
11	JSTOR	2.17	1.26	Moderate Accessibility

As shown in Table 2, students reported moderate accessibility of EIRs; several electronic resources enjoy a high level of accessibility among the students. These include E-Journals (Mean = 3.56, SD = 1.50), which recorded the highest mean score, indicating they are frequently accessed. Similarly, Google Scholar (Mean = 3.19, SD = 1.24), E-Books (Mean = 3.14, SD = 1.26), CD-ROM (Mean = 3.16, SD = 1.23), and Institutional Repository (Mean = 3.15, SD = 1.43) also reflect a high level of accessibility. These resources are likely favored due to their academic relevance and ease of use. On the other hand, resources such as Library Websites (Mean = 2.24, SD = 1.27), ProQuest (Mean = 2.66, SD = 1.34), Agora (Mean = 2.68, SD = 1.40), and JSTOR (Mean = 2.17, SD = 1.26) showed only moderate levels of accessibility. With library facilities and login access supporting use. However, infrastructural barriers such as unstable internet connectivity, erratic power supply, and limited computer terminals hinder seamless access. These findings corroborate those of Oshinaike et al. (2022), who observed that federal universities in North Central Nigeria suffered similar challenges of poor ICT infrastructure. Conversely, Chinedu-Eze and Bello (2018) reported better accessibility in private universities where stable power supply and adequate ICT infrastructure facilitated student access. This indicates that accessibility is highly dependent on institutional support systems, which continue to be a challenge in public universities like Adamawa State University.

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Table 3: Extent of Utilization of Electronic Information Resources among Undergraduate Students in Adamawa State University Mubi

S/N	Utilization Purpose n=291	Mean	Std. Dev.	Remark
1	Assignments	3.29	0.83	High
2	Research Projects	3.28	0.85	High
3	Examination Preparation	3.19	0.88	Moderate
4	Personal Study	3.14	0.89	Moderate
5	Others	2.83	1.03	Moderate
	Grand Mean	**3.15**		**Moderate**

Source: Field work (2025)

The results in Table 3 revealed that although EIRs were accessible, their frequency of use among undergraduate students was relatively low. Most respondents reported using EIRs occasionally rather than daily. with mean scores of 3.29 and 3.28, respectively, both indicating a high level of utilisation. This suggests that students heavily rely on electronic information resources to complete coursework and academic research tasks. In contrast, activities such as examination preparation (Mean = 3.19), personal study (Mean = 3.14), and other unspecified uses (Mean = 2.83) recorded moderate levels of utilisation, reflecting that while electronic resources are accessed for these purposes, the frequency or intensity is not as high as for assignment and research-related tasks. The grand mean score of 3.15 confirms a moderate extent of utilisation of electronic information resources among students. This finding echoes Ogunbodede and Oribhabor (2022), who found that students at the University of Africa, Toru-Orua, had access to digital resources but did not use them regularly due to limited awareness and inadequate sensitization. Similarly, Onuoha and Chukwueke (2023) noted that while reference materials were available and accessible, they were underutilized by undergraduates. Thus, the findings suggest that access alone does not guarantee frequent use unless accompanied by user training, awareness, and motivation.

Table 4: Frequency of Access to Electronic Information Resources in Adamawa State University Mubi

S/N	Access Frequency n=291	Mean	Std. Dev.	Remark
1	Daily	3.14	0.85	Moderate
2	Weekly	3.18	0.87	Moderate
3	Monthly	2.38	0.96	Low
4	Rarely	2.17	0.91	Low
5	Never	2.00	1.00	Low
	Grand Mean	**2.57**		**Moderate**

Source: Field work (2025)

In Table 4, the findings showed that EIRs were primarily utilized for academic assignments, research projects, and examination preparation, with less emphasis on advanced research or

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self-directed learning. **Students most frequently access these resources on a weekly (Mean = 3.18)** and **daily basis (Mean = 3.14),** both of which fall under the **moderate** usage category. This indicates a reasonable level of engagement with electronic information tools among a significant portion of the student population. However, the data also reveal that some students access electronic resources less frequently, as shown by **lower mean scores** for monthly (Mean = 2.38), rarely (Mean = 2.17), and never (Mean = 2.00) access patterns, which are all categorized as **low**. The **grand mean of 2.57** reflects a **moderate overall frequency** of access, suggesting that while many students are actively utilizing electronic information resources, there remains a notable segment who do not access them regularly.

This outcome supports Adeleke and Makinde's (2020) findings that EIRs were widely used for immediate academic needs but underutilized for in-depth scholarly purposes. Similarly, Otuza (2023) observed that while students were aware of common EIRs, they rarely used specialized databases, pointing to a superficial pattern of utilization. These findings highlight the need for structured information literacy programs that promote deeper engagement with EIRs beyond surface-level academic tasks.

Table 5: Challenges faced by Undergraduate Students in Accessing and Utilizing of Electronic Information Resources in Modibbo Adama University, Mubi

S/N	Challenge n=291	Mean	Std. Dev.	Remark
1	Poor Internet Connectivity	3.45	0.78	High
2	Lack of Training	3.44	0.80	High
3	Limited Access to Devices	3.40	0.81	High
4	Restricted Access to Databases	3.25	0.85	High
5	Others	2.50	1.00	Moderate
	Grand Mean	**3.21**		**High**

Source: Field work (2025)

As detailed in Table 5, the study identified major challenges affecting EIR use, including unstable electricity, poor internet connectivity, inadequate ICT facilities, and insufficient user training. (Mean = 3.45), followed closely by *lack of training* (Mean = 3.44), and *limited access to devices* (Mean = 3.40). These are all rated **high**, suggesting they are widely experienced among students and greatly impact their ability to effectively use electronic information systems. In addition, *restricted access to academic databases* also emerged as a considerable challenge (Mean = 3.25), maintaining a high-level remark, while *other challenges* received a moderate mean rating of 2.50, indicating a relatively lower but still noticeable concern among students. The **grand mean of 3.21** These challenges mirror those reported in several empirical studies. For example, Adeleke and Makinde (2020) and Oshinaike et al. (2022) highlighted erratic power supply and infrastructural deficiencies as barriers to effective utilization of EIRs in Nigerian public universities. Similarly, Otuza (2023) and Ogunbodede and Oribhabor (2022) emphasized the role of inadequate awareness and limited ICT facilities as key obstacles. Interestingly, this contrasts with the findings of Chinedu-Eze and Bello (2018), who documented better infrastructure and fewer challenges in private institutions, reinforcing the disparity between public and private universities

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Hypotheses
There is no significant difference on the level of accessibility of electronic information resources among Undergraduate Students in Adamawa State University Mubi

Table 6: Chi-squared Result on the Level of Accessibility of Electronic Information Resources

Pearson's Chi-squared test	Value
X-squared	7356.1
df (degree of freedom)	60
p-value	2.2e-16
Alpha value	0.05

Table 6 shows. The chi-square analysis in Table 6 shows the Chi-squared value is 7356.1 with 60 degrees of freedom, and the associated p-value is 2.2e-16, which is far less than the alpha level of 0.05. Since the p-value is significantly lower than the threshold, we reject the null hypothesis. This indicates that there is a statistically significant difference in the level of accessibility to electronic information resources among the students. In other words, not all undergraduate students in the university have equal access to electronic information resources, suggesting disparities that may be due to factors such as department, year of study, or access to digital tools and infrastructure a significant relationship between the availability of EIRs and their utilization, suggesting that students are more likely to use resources when they are adequately provided and accessible. This supports Onuoha and Chukwueke's (2023) assertion that while availability does not always translate to usage, adequate provision significantly influences the likelihood of utilization. Therefore, increasing the range and reliability of EIRs in Adamawa State University would likely enhance student engagement with these resources.

H_{02}:- There is no significant difference on the extent of utilization of electronic information resources among Undergraduate Students in Adamawa State University Mubi.

Table 7: Pearson's Chi-squared test on the Extent of Utilization of Electronic Information Resources

Pearson's Chi-squared test	Value
X-squared (Chi-squared)	7628.8
df (degree freedom)	60
p-value	2.2e-16
Alpha value	0.05

The result in Table 7 presents the Chi-squared value is 7628.8 with 60 degrees of freedom, and the p-value is 2.2e-16, which is considerably lower than the standard alpha level of 0.05. Given that the p-value is less than the alpha value, the null hypothesis is rejected. This implies that there is a statistically significant difference in how students utilise electronic information resources. The variation in usage could be attributed to factors such as students' academic

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level, field of study, familiarity with digital tools, or availability of internet-enabled devices. Therefore, the utilisation of electronic resources is not uniform across the student population

Summary of Findings

The following are summary of findings:

1. The findings of the study revealed that respondents have access to several electronic information resources such as Google Scholar, e-books, and e-journals, with e-journals and Google Scholar being the most commonly available. and There is no significant difference on level of availability resources and students in accessing electronic resources
2. The findings of the study shows that e-journals, Google Scholar, and e-books highly accessible,
3. The findings of the study revealed that students heavily use electronic resources for assignments, research projects, and exam preparation and A significant positive relationship exists students use electronic resources more when they are easily accessible.
4. The findings of the study revealed that students access electronic resources on a weekly or daily basis, though not consistently across all students.
5. The findings of the study revealed that the key challenges that significantly affect students' ability to fully utilize electronic resources include poor internet connectivity, lack of training, and limited access to devices

Discussion

The findings of this study revealed that a range of electronic resources, such as Google Scholar, e-books, e-journals, Science Direct, and institutional repositories, are available to undergraduate students at Adamawa State University, Mubi. However, subscription-based resources such as ProQuest and JSTOR, alongside older storage formats like CD-ROMs and OPAC, were rated as not available. This outcome mirrors the findings of Oduwole and Akpati (2023), who reported that Nigerian universities rely heavily on open-access platforms like Google Scholar while struggling to sustain premium database subscriptions due to cost implications. Similarly, Okiki (2021) observed that while core resources are available in most Nigerian institutions, specialized electronic databases often remain inaccessible because of funding constraints.

In terms of accessibility, the study established that resources such as e-journals, Google Scholar, e-books, and institutional repositories recorded high levels of access, while JSTOR, ProQuest, and Agora showed only moderate accessibility. This result supports the work of Egberongbe (2021), who highlighted that accessibility to electronic resources is often shaped by infrastructural constraints, poor interface design, and inadequate awareness. Furthermore, Okiki and Asiru (2021) stressed that without effective digital literacy training and user-friendly platforms, resources may remain underutilized regardless of their availability. The findings, therefore, underscore the critical role of both infrastructure and training in bridging accessibility gaps.

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The extent of utilization of EIRs showed that students predominantly use them for academic purposes such as assignments and research projects, while activities like examination preparation, personal study, and other non-academic purposes were moderately rated. This aligns with the findings of Thanuskodi (2022) and Madhusudhan (2020), who both reported that undergraduates in developing countries rely on e-resources primarily for academic-related tasks rather than for general learning or leisure. The positive relationship between accessibility and utilization established in this study corroborates Okiki's (2021) assertion that students' usage of digital resources increases significantly when those resources are readily accessible and easy to use.

Regarding frequency of use, the study found that students engaged with electronic resources mainly on a weekly and daily basis, though overall usage was moderate. This finding is consistent with the report of Baro, Onyenania, and Osaheni (2020), who observed irregular patterns of e-resource usage among Nigerian undergraduates, largely due to infrastructural barriers and inconsistent access to ICT tools. The evidence suggests that while students demonstrate awareness of available EIRs, structural barriers reduce the intensity and consistency of their engagement.

Challenges faced by the students included poor internet connectivity, lack of training, limited access to devices, and restricted access to databases. These findings confirm earlier results by Gbaje (2017), who noted that inadequate ICT skills and slow internet connectivity significantly reduce the effective utilization of digital tools. Similarly, Oyedapo and Ojo (2023) emphasized that infrastructural deficits such as erratic electricity supply, low bandwidth, and outdated devices hinder students from fully benefiting from EIRs. The convergence of these studies indicates that overcoming these barriers requires a coordinated approach involving university management, library staff, ICT departments, and external stakeholders to ensure improved infrastructure, better training opportunities, and expanded subscriptions to essential databases.

Conclusion

This study concluded that electronic information resources (EIRs) are moderately available, accessible, and utilized among undergraduate students at Adamawa State University, Mubi. Open-access platforms such as Google Scholar, e-journals, and Science Direct remain the most commonly available and accessible resources, while subscription-based databases like ProQuest and JSTOR are largely unavailable. Utilization is strongly tied to academic purposes such as assignments and research projects, but overall engagement remains moderate, with many students not accessing EIRs consistently. Challenges, including poor internet connectivity, inadequate training, and limited access to ICT devices, significantly hinder students' ability to maximize the potential of electronic resources. The results underscore the need for targeted interventions to address infrastructural deficits, improve digital literacy, and expand institutional investment in electronic resources.

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Recommendations

Based on the findings and conclusion, the following recommendations are made:

1. University management should prioritize investment in premium databases such as ProQuest and JSTOR, possibly through consortia or partnerships to reduce subscription costs.
2. Strengthening internet connectivity across the campus, particularly in libraries and study areas, will significantly enhance access and utilization of EIRs.
3. Regular user education and ICT training sessions should be organized by the library to ensure students can effectively search, access, and utilize available resources.
4. The university should consider establishing digital resource centers equipped with computers, tablets, and high-speed internet to support students who lack personal devices.
5. Library staff should actively promote awareness of institutional repositories, library websites, and specialized databases through orientations, workshops, and social media platforms.
6. Collaboration between librarians, ICT departments, and faculty members is essential to integrate e-resource use into teaching, learning, and research processes.

By addressing these challenges and implementing the recommendations, Adamawa State University can enhance the availability, accessibility, and utilization of electronic information resources, thereby improving students' academic productivity and research outcomes.

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