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INSTITUTIONAL FACTORS AND UNDERGRADUATE STUDENTS' USE OF LIBRARY-BASED ELECTRONIC INFORMATION RESOURCES: EVIDENCE FROM STATE-OWNED UNIVERSITIES IN SOUTH-WEST, NIGERIA

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Abstract

University libraries in Nigeria have invested in electronic information resources (EIRs), yet undergraduate use remains uneven. This study examined how institutional policy, electricity supply, accessibility of EIRs and internet connectivity relate to undergraduates' use of library-based EIRs in state-owned universities in South-West Nigeria. A correlational survey of 300-level science and agriculture students in eight state universities yielded 1,292 usable questionnaires from 1,335 distributed (96.78%). Respondents reported using a range of resources, particularly e-databases, e-books and educational videos. Use was typically monthly to weekly; audio and video materials were used most often, while use of named scholarly databases varied. Institutional conditions were rated moderately supportive (weighted mean = 2.92 of 4), highest for policy (3.01) and lowest for internet connectivity (2.81). Institutional factors correlated positively with EIR use ($r = .424$, $p < .001$), sharing approximately 18% of the variance in reported use. Connectivity and accessibility showed the strongest associations with use. The findings point to the need to coordinate resource subscriptions with reliable power, internet access and practical arrangements that help students discover and use licensed resources.

Keywords*:* Electronic information resources; Institutional factors; State universities; Nigeria

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Introduction

In this study, electronic information resources (EIRs) are the digital resources and discovery tools that a university library provides or facilitates access to, including e-journals, e-books, databases, online catalogues, and digital repositories. These resources have the potential to support coursework and independent learning. The mere presence of these resources does not guarantee that undergraduates can access or engage with them. Here, engagement refers to reported engagement with library-provided EIRs by undergraduates, distinguishing students' practical engagement with these resources from their nominal availability.

The issue of concern in this study is that the availability of EIRs does not always equate to consistent student engagement. Studies in Nigerian universities have established that students do not consistently use these resources when available (Alabi, 2021; Mommoh & Gomina, 2023; Omidiji, 2024; Umukoro & Tiamiyu, 2017). Research has also investigated the association between information literacy, computer self-efficacy and digital literacy skills among students with varying results (Ebijuwa & Mabawonku, 2019; Ukachi, 2015; Umar & Dangwaran, 2023). However, this study explores the issue from another angle: the extent to which institutional conditions enable or impede successful engagement with library EIRs.

For this study, institutional factors are defined as the policies and practical systems by which a university facilitates or impedes students' engagement with library-based EIRs. Four institutional conditions are of interest: institutional policy, electricity supply, accessibility of EIRs, and internet connectivity. Institutional policy refers to the

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guidelines and support structures for the acquisition and use of resources; electricity supply entails the power needed for operating devices and network equipment; accessibility is the ease with which students can access the resources; and internet connectivity refers to the availability and stability of the connection needed for use. These conditions fall under facilitating conditions in the Unified Theory of Acceptance and Use of Technology (UTAUT), which associates organisational and technical support with technology use (Venkatesh et al., 2003). This study employs UTAUT to provide a theoretical basis for the examination of the extent to which institutional support enables or impedes students' reported engagement with EIRs.

State-owned universities are an important focus of the study because their ability to fund electronic collections, connectivity and reliable electricity supply is informed by the priorities of the state and the resources of the institution. The National Universities Commission listed 69 state universities in Nigeria in 2026, alongside federal and private institutions (National Universities Commission [NUC], 2026). In South-West Nigeria, studies on the use of electronic resources have focused mainly on federal or private universities (Alabi, 2021; Ebijuwa & Mabawonku, 2019; Ukachi, 2015). The focus on state-owned universities is justified by the need to establish the extent to which institutional policy, electricity, accessibility, and internet connectivity associate with students' use of library EIRs.

By virtue of the above, this study seeks to examine the association between institutional factors (institutional policy, electricity supply, accessibility of EIRs and

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internet connectivity) and undergraduates' reported use of library-based EIRs in state-owned universities in South-West Nigeria.

Research Questions

RQ1. Which types of library-based EIRs do undergraduates in state-owned universities in South-West Nigeria use?

RQ2. How frequently do undergraduates in state-owned universities in South-West Nigeria use library-based EIRs?

RQ3. How do undergraduates rate the institutional factors policy, electricity supply, accessibility of EIRs and internet connectivity that support their use of library-based EIRs?

Hypothesis

H_0: There is no significant relationship between institutional factors and undergraduates' use of library-based EIRs in state-owned universities in South-West Nigeria.

Literature review

Undergraduates' Use of Library-Based Electronic Information Resources

Library-based Electronic Information Resources (LbEIRs) in this study include digital resources provided by university libraries such as e-journals, e-books, databases, online public access catalogues (OPACs) and repositories. Although students may not always differentiate between these and freely available websites, Tlakula and Fombad (2017) reported confusion between library resources and general web sources among students at the University of Venda, while Alphonce and Mwantimwa (2019) found Tanzanian students to rely more on internet resources than several library formats. The relevance of such distinctions in interpreting self-reported use is apparent. While studies in other locations note influences of convenience and study demands, studies

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from outside Nigeria illustrate variations in students' tendencies to use library-based and open web resources for their studies. In a Croatian university, Dukić and Strišković (2015) found students to use Wikipedia and other open-web sources more frequently than library resources, as did Connaway et al. (2011), who noted convenience as an important influence on information seeking. Among distance learners in Sri Lanka, Marasinghe (2025) reported frequent use of search engines, e-mail and e-books, while e-databases and e-theses were less frequently used; assignments and examination preparation were common reasons for use. The factors influencing students' choices of resources appear to relate not only to quality but also to the accessibility of resources. In other African universities, studies note the gap between availability and utilisation of electronic resources with the former far outstripping the latter.

At the University of Venda, students' use was limited and training largely restricted to first-year orientation (Tlakula & Fombad, 2017); Mawere and Sai (2018) associated limited use at Great Zimbabwe University with inadequate promotion, limited student resources and high data costs. In a Ghanaian health sciences library, users named Google and Wikipedia alongside library databases, citing data costs and low bandwidth as barriers (Ankamah et al., 2024); Acanit et al. (2024) reported similar influences on e-resource use among postgraduate engineering students in Uganda. Nigerian studies illustrate the use of electronic resources for coursework, assignments and to keep up with subject knowledge, though they note unreliable electricity and internet access as recurring problems. Alabi (2021) surveyed the use of electronic resources among undergraduates in three private universities in South-West Nigeria,

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while Omidiji (2024) examined the use of such resources at the University of Ibadan and Mommoh and Gomina (2023) reported moderate use among undergraduates at the University of Abuja. Odewole et al. (2022) investigated predictors of adoption at the University of Ibadan and Ashiru et al. (2022) explored the use of EIRs in relation to academic performance among final-year students at colleges of education in Lagos. Most such studies relate to individual institutions and characterise infrastructure as a challenge, while fewer test the hypothesis across different institutional circumstances. This study responds to the need to explore such conditions within state-owned universities in South-West Nigeria.

Institutional factors as facilitating conditions

The study draws on UTAUT and Wilson's model of information behaviour to explain why institutional conditions may matter. UTAUT describes facilitating conditions as the organisational and technical infrastructure that supports system use (Venkatesh et al., 2003). Wilson's (1999) model also recognises environmental factors that can help or hinder information seeking. Applied here, these frameworks suggest that students may value electronic resources and have the skills to use them, yet still be unable to do so when power, connectivity or access arrangements are inadequate. Ali and Warraich (2024) found a significant relationship between facilitating conditions and technology acceptance in academic and digital-library studies, while Alajmi and Alotaibi (2020) linked facilitating conditions to the frequency and depth of digital-library use.

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Related empirical studies provide further context. At the University of Benin, Umukoro and Tiamiyu (2017) identified infrastructure, network reliability, support staff and training among factors associated with e-library use. Ani et al. (2015) reported a relationship between accessibility and use of electronic resources among academic staff in Nigerian universities. Bentil et al. (2022) examined the relationship between e-resource management and use, including selection, access, promotion and training, while Kiana et al. (2021) associated library training with digital-library use among students in Namibia. The present study examines four institutional conditions relevant to access in state-owned Nigerian universities.

Institutional policy

An institutional policy on EIRs sets out how resources are selected, funded, accessed and used in teaching and learning. It can support recurring expenditure and clarify the responsibilities of library staff, ICT units, lecturers and students. However, a written policy may have little practical value if students and staff do not know about it or if it is not implemented. Bentil et al. (2022) highlight the importance of institutional decisions in managing and providing access to electronic resources. This study therefore considers students' perceptions of policy alongside the practical conditions that support use.

Electricity supply

Electronic resources depend on electricity to operate servers, network equipment, computers and students' devices. Power interruptions can prevent access even when a library has paid for the resources. The World Bank (2025) reported that 61% of

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Nigeria's population had access to electricity in 2023, while Adoghe et al. (2023) discussed continuing constraints in power generation and distribution. Nigerian university studies have also identified electricity failure as a problem for electronic-resource use (Alabi, 2021; Omidiji, 2024; Umukoro & Tiamiyu, 2017). In this study, electricity supply is treated as a practical condition that may support or disrupt students' access.

Accessibility of electronic information resources

A resource may be licensed by a library but still be difficult for students to use. Accessibility depends on the number and location of access points, limits on simultaneous users, off-campus authentication, awareness of available resources and information about new acquisitions. Dadzie (2005) reported that some licensed databases at Ashesi University College were little used because students were unaware of them. Similar awareness and access problems were noted by Tlakula and Fombad (2017) and Acanit et al. (2024). The present study therefore distinguishes the library's provision of resources from the ease with which students can reach them.

Internet connectivity

Internet connectivity is necessary for most networked EIRs, particularly when students access them beyond the library. The International Telecommunication Union (2025) reported that 38% of Africa's population was online in 2024, compared with a global average of 68%. Identified affordability as an important barrier. Studies in Tanzania, Uganda and Nigeria also report bandwidth limitations and the cost of personal data as constraints on electronic-resource use (Acanit et al., 2024; Alphonce &

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Mwantimwa, 2019; Alabi, 2021; Omidiji, 2024). Connectivity is therefore examined as a distinct institutional condition rather than treated as part of general resource availability.

These conditions are often listed as challenges, but fewer studies assess them together and examine how they relate statistically to undergraduates' use. This study addresses that gap by measuring students' ratings of the four conditions and testing their relationship with reported use in state-owned universities in South-West Nigeria.

Methodology

The study used a descriptive survey design of the correlational type. Data were collected once, by questionnaire, and analysed with descriptive statistics for the research questions and correlation analysis for the hypothesis.

The South-West geopolitical zone of Nigeria comprises Ekiti, Lagos, Ogun, Ondo, Osun and Oyo States. At the time of the study, according to National University Commission, there were 14 state-owned universities in the zone that had been established before the fourth generation universities (i.e. 1980-2008). The target population was 300-level undergraduates in the Faculties of Science and Agriculture of eight of these universities, in four departments common to all eight: Computer Science and Chemistry in Science, and Soil Science and Animal Science in Agriculture. The population totalled 24,649 students (Table 1). Third-year students were chosen because they have completed the general studies and library-use courses of the first two years and have had at least two academic sessions in which to use library EIRs, but are not yet absorbed by final-year projects.

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A four-stage sampling procedure was followed. In the first stage, eight of the 14 universities were selected purposively as the student making the most use of the university library and the electronic information resources; together they cover all six states of the zone. In the second stage, the Faculties of Science and Agriculture were selected purposively as the student making the most use of the university library and the electronic information resources and both require students to consult current scientific literature. In the third, two departments were selected from each faculty on the same criterion. In the fourth, 5% of the 300-level students in each department were also selected purposively, based on the previous criterion giving a planned sample of 1,232 (Table 1). This exceeds the 1,023 respondents needed for a ±3% margin of error at 95% confidence in a population of 24,649. To allow for non-return, 1,335 copies of the questionnaire were distributed.

Table 1: Population of 300-level students and allocated sample, by university and department

University (state)	**Computer Science**	**Chemistry**	**Soil Science**	**Animal Science**	**Total**
Olabisi Onabanjo University (Ogun)	823 (41)	831 (42)	599 (30)	584 (29)	2,837 (142)
Tai Solarin University of Education (Ogun)	825 (41)	815 (41)	837 (42)	827 (41)	3,304 (165)
Ladoke Akintola University of Technology (Oyo)	998 (50)	1,004 (50)	995 (50)	1,007 (50)	4,004 (200)
Osun State University (Osun)	610 (31)	714 (36)	750 (38)	774 (38)	2,848 (143)
Lagos State University (Lagos)	998 (50)	714 (36)	750 (38)	774 (39)	3,236 (163)

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Ekiti State University (Ekiti)	759 (38)	628 (31)	768 (38)	764 (38)	2,919 (145)
Adekunle Ajasin University (Ondo)	691 (35)	679 (34)	689 (34)	699 (35)	2,758 (138)
Olusegun Agagu University of Science and Technology, Okitipupa (Ondo)	718 (36)	585 (29)	735 (36)	705 (35)	2,743 (136)
Total	**6,422 (322)**	**5,970 (299)**	**6,123 (306)**	**6,134 (305)**	**24,649 (1,232)**

Note. Figures are departmental populations of 300-level students; figures in parentheses are the allocated sample (5% of each departmental population, rounded).

Data were collected with a structured questionnaire developed for the study from the literature reviewed above. It had three sections. Section A recorded gender and age. Section B measured use of library-based EIRs with 30 items in three subscales: types of EIRs used (10 items), purposes of use (10 items) and frequency of use (10 items). Items in the first two subscales were answered on a four-point scale (strongly disagree = 1, disagree = 2, agree = 3, strongly agree = 4); frequency items were answered on a five-point scale (never = 1, occasionally = 2, monthly = 3, weekly = 4, daily = 5). Scores were summed to give a composite use score with a possible range of 30 to 130. Section C measured institutional factors with 20 items in four subscales of five items each: institutional policy, electricity supply, accessibility of EIRs and internet connectivity, answered on the same four-point agreement scale and summed to a composite with a possible range of 20 to 80. Internal consistency in the main sample was Cronbach's alpha = (r = 0.69) for the use scale and (r = 0.86) for the institutional factors scale.

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Data were analysed with IBM SPSS Statistics version 28. Frequencies, percentages, means and standard deviations answered the research questions. On the four-point scales a mean of 2.50, the scale midpoint, was taken as the criterion for agreement; on the five-point frequency scale means were read against the scale anchors, so that 3.00 corresponds to monthly and 4.00 to weekly use. Pearson's product-moment correlation tested the hypothesis at the .05 level, and zero-order correlations between the four institutional-factor subscales and the composite use score were computed to show which conditions were most closely associated with use. Because the sample was large enough for small coefficients to reach significance, effect sizes are interpreted with Cohen's (1988) conventions (*r* of about .10 small, .30 medium and .50 large), and the squared correlation is reported as the proportion of shared variance.

Results and Discussion

Response rate and respondent profile

Of the 1,335 questionnaires distributed, 1,292 were returned complete and usable, giving a response rate of 96.78%. Return rates by university ranged from 95.33% at Olabisi Onabanjo University to 98.24% at Tai Solarin University of Education (Table 2).

Table 2 Questionnaire distribution and return, by university

University	Distributed	Returned and usable	Return rate (%)
Olabisi Onabanjo University	150	143	95.33
Tai Solarin University of Education	170	167	98.24
Ladoke Akintola University of	215	209	97.21

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Technology			
Osun State University	150	146	97.33
Lagos State University	220	211	95.91
Ekiti State University	150	144	96.00
Adekunle Ajasin University	140	135	96.43
Ondo State University	140	137	97.86
Total	**1,335**	**1,292**	**96.78**

Women made up 52.0% of respondents (n = 672) and men 48.0% (n = 620). Most respondents (63.0%) were aged 20 to 22; 16.3% were 17 to 19, 16.4% were 23 to 25 and 4.3% were 26 or older. The mean age was 21.65 years (SD = 2.45).

Research Question 1: Which types of library-based EIRs do undergraduates in state-owned universities in South-West Nigeria use?

Table 3: Types of library-based electronic information resources used by respondents

Resource	SD n (%)	D n (%)	A n (%)	SA n (%)	M	SD
E-databases	100 (7.7)	168 (13.0)	490 (37.9)	534 (41.3)	3.13	0.92
E-books	107 (8.3)	191 (14.8)	517 (40.0)	477 (36.9)	3.06	0.92
Educational videos	153 (11.8)	170 (13.2)	468 (36.2)	501 (38.8)	3.02	1.00
E-journals	113 (8.7)	202 (15.6)	568 (44.0)	409 (31.7)	2.99	0.91
Digital library resources	165 (12.8)	165 (12.8)	475 (36.8)	487 (37.7)	2.99	1.01
Audio materials	171 (13.2)	162 (12.5)	508 (39.3)	451 (34.9)	2.96	1.00

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Electronic catalogue (OPAC)	127 (9.8)	250 (19.3)	476 (36.8)	439 (34.0)	2.95	0.96
CD-ROM	154 (11.9)	199 (15.4)	523 (40.5)	416 (32.2)	2.93	0.97
E-abstracts	134 (10.4)	238 (18.4)	535 (41.4)	385 (29.8)	2.91	0.94
Named databases (AGORA, JSTOR, EBSCOhost, AJOL, HINARI)	149 (11.5)	280 (21.7)	470 (36.4)	393 (30.4)	2.86	0.98
Weighted mean					**2.98**	

Note. SD = strongly disagree; D = disagree; A = agree; SA = strongly agree; scored 1–4. Criterion mean = 2.50. Percentages are those reported by the authors and are computed on 1,292 responses.

Table 3 shows that respondents reported using a range of library-based EIRs. All ten items exceeded the criterion mean of 2.50, and the weighted mean was 2.98. E-databases (M = 3.13), e-books (M = 3.06) and educational videos (M = 3.02) received the highest ratings, followed by e-journals and digital library resources (both M = 2.99) and audio materials (M = 2.96). The OPAC (M = 2.95), CD-ROMs (M = 2.93) and e-abstracts (M = 2.91) received lower ratings. The item naming specific licensed databases (AGORA, JSTOR, EBSCOhost, AJOL and HINARI) had the lowest mean (2.86): 66.8% agreed that they used these databases, compared with 79.2% who agreed that they used e-databases in general. This difference suggests that some respondents may have interpreted "e-databases" broadly rather than as the specific resources licensed by their libraries.

The reported pattern of use is consistent with studies in Nigerian universities and elsewhere, which find that students turn to electronic resources for assignments,

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coursework and personal learning (Alabi, 2021; Marasinghe, 2025; Omidiji, 2024). The present study did not include a separate research question on purpose of use. These observations should be treated as context rather than as a distinct finding from the three research questions.

Use of named licensed databases was lower and more uneven than use of e-databases in general. This finding is consistent with reports that students sometimes group library resources together with open-web sources and may not know which databases their institution subscribes to (Acanit et al., 2024; Ankamah et al., 2024; Tlakula & Fombad, 2017). Library orientation and subject-specific demonstrations should therefore identify licensed databases by name and show students how to access them.

The relatively low ratings for the OPAC and CD-ROMs also warrant attention. CD-ROMs may be less relevant where online resources are readily available, while low OPAC use may indicate that students rely on general search engines rather than the library catalogue. Libraries should review whether older formats remain useful and ensure that the catalogue is easy to find and use.

Research Question 2: How frequently do undergraduates in state-owned universities in South-West Nigeria use library-based EIRs?

Table 4: Frequency of use of library-based electronic information resources

Resource	Never n (%)	Occasionally n (%)	Monthly n (%)	Weekly n (%)	Daily n (%)	M	SD
Audio materials	121	258	144	239	530	3.6	1.4

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	(9.4)	(20.0)	(11.1)	(18.5)	(41.0)	2	2
Educational videos	141 (10.9)	207 (16.0)	178 (13.8)	318 (24.6)	448 (34.7)	3.56	1.38
Digital library resources	221 (17.1)	250 (19.3)	158 (12.2)	201 (15.6)	462 (35.8)	3.34	1.53
E-journals	189 (14.6)	217 (16.8)	254 (19.7)	263 (20.4)	369 (28.6)	3.31	1.42
E-books	185 (14.3)	264 (20.4)	182 (14.1)	300 (23.2)	361 (27.9)	3.30	1.43
E-databases	194 (15.0)	230 (17.8)	197 (15.2)	338 (26.2)	333 (25.8)	3.30	1.41
E-abstracts	205 (15.9)	275 (21.3)	198 (15.3)	254 (19.7)	360 (27.9)	3.22	1.45
Named databases (AGORA, JSTOR, EBSCOhost, AJOL, HINARI)	291 (22.5)	231 (17.9)	164 (12.7)	215 (16.6)	391 (30.3)	3.14	1.56
Electronic catalogue (OPAC)	243 (18.8)	262 (20.3)	306 (23.7)	211 (16.3)	270 (20.9)	3.00	1.40
CD-ROM	237 (18.3)	346 (26.8)	225 (17.4)	296 (22.9)	188 (14.6)	2.89	1.34
Weighted mean						**3.27**	

Note. Scored never = 1, occasionally = 2, monthly = 3, weekly = 4, daily = 5. Resources are ordered by mean.

The weighted mean for frequency was 3.27, between monthly (3) and weekly (4) use (Table 4). Audio materials (M = 3.62) and educational videos (M = 3.56) were used most often, with 41.0% and 34.7% of respondents respectively reporting daily use. Digital library resources (M = 3.34), e-journals (M = 3.31), e-books (M = 3.30) and e-

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databases (M = 3.30) followed. E-abstracts (M = 3.22) and the named databases (M = 3.14) came next; the OPAC (M = 3.00) and CD-ROMs (M = 2.89) were used least. Responses varied considerably. For the named databases, 30.3% reported daily use, while 22.5% had never used them and 17.9% used them only occasionally. For CD-ROMs, 45.1% reported never or occasional use; 39.1% used the OPAC never or only occasionally.

Audio materials and educational videos had the highest frequency ratings. This may reflect students' preference for multimedia when studying, although the questionnaire cannot establish whether every item referred to library-provided content or material found on the open web. Libraries can respond by curating educational audio and video and making these resources searchable alongside books and journals. This result corroborates the work of Okiki and Asiru (2011), who found that institutional constraints such as erratic power supply, inadequate ICT infrastructure and limited database subscriptions hinder student's optimal use of ERs in Nigerian universities. Similarly, Omeluzor et al. (2012) stressed that institutional commitment to funding and maintaining ICT facilities directly influences the student's frequency and quality of use of ERs. By confirming these earlier studies, the present research reinforces the argument that the institutional environment is an indispensable factor in promoting electronic information resource usage among UG.

Research Question 3: How do undergraduates rate the institutional factors policy, electricity supply, accessibility of EIRs and internet connectivity that support their use of library-based EIRs?

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Table 5: Respondents' ratings of institutional factors supporting the use of electronic information resources

Item	SD n (%)	D n (%)	A n (%)	SA n (%)	M	SD
Institutional policy (subscale weighted mean = 3.01)						
There is a policy in my university that regulates the use of e-resources	89 (6.9)	170 (13.2)	596 (46.1)	437 (33.8)	3.07	0.86
The university has a policy on electronic information database subscription	75 (5.8)	314 (24.3)	491 (38.0)	412 (31.9)	2.96	0.89
University policies on the use of e-resources is stated	84 (6.5)	309 (23.9)	543 (42.0)	356 (27.6)	2.91	0.88
University guidelines support the use of e-resources	84 (6.5)	226 (17.5)	523 (40.5)	459 (35.5)	3.05	0.89
My university always emphasises the need for students to use e-resources	103 (8.0)	154 (11.9)	575 (44.5)	460 (35.6)	3.08	0.89
Electricity supply (subscale weighted mean = 2.96)						
Constant electricity supply is available in the university library	119 (9.2)	234 (18.1)	419 (32.4)	520 (40.2)	3.04	0.98
There are alternative sources of electricity (generator or solar) in the students' hostels	133 (10.3)	208 (16.1)	530 (41.0)	421 (32.6)	2.96	0.95
Electricity supply is not a problem at my university	171 (13.2)	249 (19.3)	514 (39.8)	358 (27.7)	2.82	0.98
A stable power supply in the university would not make using e-resources difficult	127 (9.8)	200 (15.5)	579 (44.8)	386 (29.9)	2.95	0.92
There are solar or generator	140	187	458	507	3.03	0.99

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charging ports in the university when there is no electricity supply	(10.8)	(14.5)	(35.4)	(39.2)		
Accessibility of EIRs (subscale weighted mean = 2.91)						
E-resources are accessible in the library	94 (7.3)	160 (12.4)	615 (47.6)	423 (32.7)	3.06	0.86
Electronic information resources are easily accessible	105 (8.1)	252 (19.5)	579 (44.8)	356 (27.6)	2.92	0.89
The library gives updates on new e-resources accessible in the library	146 (11.3)	299 (23.1)	482 (37.3)	365 (28.3)	2.83	0.97
There are access points for e-resources in the library	138 (10.7)	299 (23.1)	491 (38.0)	364 (28.2)	2.84	0.96
E-resources are available to multiple users studying at the same time	141 (10.9)	264 (20.4)	476 (36.8)	411 (31.8)	2.90	0.97
Internet connectivity (subscale weighted mean = 2.81)						
The university has quality internet for accessing e-resources	113 (8.7)	256 (19.8)	533 (41.3)	390 (30.2)	2.93	0.92
The university has a subsidised café that students can use	160 (12.4)	288 (22.3)	473 (36.6)	371 (28.7)	2.82	0.99
There is free log-in to access the internet	212 (16.4)	301 (23.3)	437 (33.8)	342 (26.5)	2.70	1.03
There is a technical support unit in my university that helps students solve device and internet problems	140 (10.8)	357 (27.6)	454 (35.1)	341 (26.4)	2.77	0.96
There are internet-enabled computers for loan to students in my university library	171 (13.2)	295 (22.8)	408 (31.6)	418 (32.4)	2.83	1.03

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Overall weighted mean	**2.92**

Note. SD = strongly disagree; D = disagree; A = agree; SA = strongly agree; scored 1–4. Criterion mean = 2.50.

The overall weighted mean of 2.92 indicates that respondents viewed institutional support as moderate. Institutional policy had the highest subscale mean (3.01). Approximately four in five respondents agreed that their university had a policy regulating e-resource use (79.9%) and that the policy encouraged students to use EIRs (80.1%); 76.0% agreed that guidelines supported use, and 69.9% agreed that a policy covered database subscriptions. However, 69.6% also agreed with the negatively worded statement that policies on e-resource use were not stated. This apparent contradiction may mean that students recognized that policies existed but did not know their content or where to find them.

Electricity supply had a subscale mean of 2.96. Approximately three-quarters of respondents agreed that the university library had regular electricity (72.6%), that solar or generator charging facilities were available during outages (74.6%), and that alternative power was available in hostels (73.6%). A smaller proportion (67.5%) agreed that electricity was not a problem. The variation in responses indicates that students' experience of power supply was not uniform.

Accessibility of EIRs had a subscale mean of 2.91. While 80.3% agreed that e-resources were accessible in the library, fewer agreed that access was easy (72.4%), that several users could access resources at the same time (68.6%), that there were enough access points (66.2%), or that the library publicized newly acquired resources

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(65.6%). The results point to a difference between having resources available and making them easy to discover and use.

Internet connectivity received the lowest subscale mean (2.81). Although 71.5% agreed that the university had good internet for accessing EIRs, only 65.3% reported a subsidized internet café, 64.0% access to loanable internet-enabled computers, 61.5% a technical support unit and 60.3% free access to the campus network. Free campus log-in had the lowest item mean (2.70) and the largest standard deviation (1.03), suggesting differences in access across respondents.

The policy results require careful interpretation. Although many respondents acknowledged the existence of a policy, a similar proportion agreed that policy guidance was not stated. Students may have been responding to different aspects of policy awareness, or the negatively worded item may have been interpreted inconsistently. Universities should make policies easy to locate, explain them during orientation and connect them to the practical steps students take when using EIRs.

Electricity supply was rated more favourably than connectivity, but responses varied. The finding does not mean that power is consistently reliable across the participating universities; it suggests that students' access to electricity differs. Backup power for library spaces and ICT facilities remains important, particularly where students depend on campus equipment to reach licensed resources.

Accessibility ratings suggest that the resources are easier to reach inside the library than through wider access arrangements. Fewer students reported enough access points or regular updates about new acquisitions. This is in line with the

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distinction between resource availability and practical accessibility noted in earlier studies (Ani et al., 2015; Dadzie, 2005). Libraries should improve off-campus access where licensing permits, communicate new acquisitions and assess whether access points meet student demand.

Internet connectivity was the lowest-rated condition, and fewer than two-thirds of respondents reported free campus log-in or a technical support unit. Students who must rely on personal mobile data face an additional cost when using electronic resources. This pattern is consistent with studies that identify data costs and unreliable connectivity as barriers in African universities (Acanit et al., 2024; Alphonce & Mwantimwa, 2019; Alabi, 2021; Omidiji, 2024). Improving campus connectivity and user support should therefore be a priority.

Hypothesis

Hypothesis: There is no significant relationship between institutional factors and undergraduates' use of library-based EIRs?

Table 6
Means, standard deviations and zero-order correlations between use of library-based EIRs and institutional factors

Variable	M	SD	1	2	3	4	5
1. Use of library-based EIRs (30 items)	92.42	18.76	—				
2. Institutional policy	15.06	2.89	.319	—			
3. Electricity supply	14.79	3.40	.333	.507	—		
4. Accessibility of EIRs	14.53	3.33	.370	.602	.629	—	
5. Internet connectivity	14.05	3.72	.401	.596	.656	.668	—
Institutional factors, composite (20 items)	**58.44**	**11.25**	**.424**				

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Note. N = 1,292. All correlations are significant at $p < .001$ (two-tailed). Possible ranges: use 30–130; each institutional-factor subscale 5–20; composite 20–80.

All four institutional subscales were positively correlated with use. Internet connectivity had the strongest association (r = .401), followed by accessibility (r = .370), electricity supply (r = .333) and institutional policy (r = .319). The subscales were also correlated with one another (r = .507–.668), so the individual coefficients describe associations and should not be interpreted as independent effects.

The composite institutional-factor score (M = 58.44, SD = 11.25) was positively and significantly correlated with the composite use score (M = 92.42, SD = 18.76), r = .424, p < .001 (Table 6). The null hypothesis was rejected. The association is medium in size under Cohen's (1988) conventions, and the squared correlation indicates that institutional factors shared approximately 18% of the variance in reported use.

The positive association between institutional factors and use suggests that the conditions provided by universities are relevant to students' ability to use library-based EIRs. This result complements studies of student-level factors such as computer self-efficacy and information literacy (Ebijuwa & Mabawonku, 2019; Ukachi, 2015; Popoola & Adedokun, 2023), but coefficients from different studies should not be compared as if they were measured with identical instruments. In the present sample, institutional conditions were meaningfully associated with reported use, supporting the study's focus on the environment in which students access resources.

Connectivity and accessibility had stronger associations with use than electricity and policy. These results identify practical priorities, but they do not establish that one factor independently causes more use than another: the institutional subscales were

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correlated with each other, and no multivariable model was fitted. Future analysis could examine whether policy is associated with use indirectly through investment in power, connectivity and access arrangements.

The findings should be read in light of several limitations. Use was self-reported and may not match platform log data; some respondents may also have interpreted library-based resources to include open-web material. The sample covered 300-level students in selected departments at eight state universities, so the results may not represent students in other years, disciplines or institutions. The cross-sectional design and use of one questionnaire for both measures also limit causal interpretation and may inflate the observed association. Future studies should compare survey responses with platform statistics, include a wider range of students, and use multivariable or multilevel analysis alongside interviews with library and ICT staff.

Recommendations

1. The university management should enhance internet accessibility at campuses (free/subsidised student log-in, extensive Wi-Fi coverage) and provide technical support. Connectivity has the lowest rating among institutional conditions and is most highly associated with use.

2. The university libraries and ICT units should re-examine access arrangements for licensed EIRs. They should develop new access points (where necessary), allow access from off-campus (as licensed), clarify instructions for use, and announce newly acquired resources. The gaps in access points, simultaneous access and news about resources should thus be filled.

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3. The university management should ensure a dependable power supply to the libraries and ICT facilities, with appropriate back-up generators such as solar/generator where applicable. Though rated higher than connectivity, electricity availability had mixed responses from respondents, and EIR usage depends on functioning equipment.

4. The libraries should communicate institutional policies on EIRs in simple language, make them readily accessible to students/staff and incorporate pertinent guidelines in orientation programmes and discipline-specific information-literacy discussions. Usage instruction should focus on the use of named, licensed databases and library catalogue, rather than making generic references to electronic resources.

5. The university management, state governments and relevant funding agencies should ensure recurring budget items for subscriptions, bandwidth, power and user support. Seek partnerships with ICT providers and research networks where applicable. Budgetary provisions for resource acquisition and infrastructural development should be collated to ensure that subscription monies are matched by the capacity to deliver to users.

6. Library managers should analyse use through the statistics generated on licensed platforms and through periodic student feedback, disaggregated by type of resource, to inform collection development. Comparison of the use of platforms with results from usage surveys will indicate under-subscribed

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subscriptions and assess the extent to which interventions have improved access.

Conclusion

The study established that undergraduates at state-owned universities in South-West Nigeria reported using a variety of library-based EIRs, with audio/video materials being most used and named, licensed databases least. Institutional support was evaluated as moderate (policy received the highest rating, connectivity the lowest) and all four institutional factors were positively associated with use; the composite institutional factors score had a medium-sized relationship with reported use (R^2 = 18%). Since the study design was cross-sectional and relied on self-reporting, no causal inferences can be made. There is sufficient evidence, however, to recommend that initiatives to improve use require simultaneous attention to student awareness/skills and institutional factors that facilitate access to resources. Reliable connectivity, simplified access, dependable power and effective communication of institutional policies are key areas of intervention.

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