

PERCEIVED USEFULNESS, INFORMATION LITERACY SKILLS, AND ELECTRONIC LIBRARY USE AMONG STUDENTS OF COLLEGES OF EDUCATION IN OSUN STATE, NIGERIA

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Abstract

This study examined the influence of perceived usefulness and information literacy skills on electronic library use among students in selected Colleges of Education in Osun State, Nigeria. The investigation was motivated by the persistent gap between the substantial promise of digital library infrastructure and the comparatively modest levels of uptake recorded among teacher-trainee populations. A descriptive survey design of the correlational type was adopted. Data were collected from 215 students across three institutions using a structured questionnaire, yielding a return rate of 97.7 percent. Findings showed that the World Wide Web was the most frequently consulted electronic library resource, and that usage was directed overwhelmingly toward academic rather than recreational ends. The level of perceived usefulness was moderate, with a composite mean of 31.2, whereas information literacy skills were high, with a composite mean of 67.56. Statistically significant positive relationships were established between perceived usefulness and electronic library use ($r = .507$), between information literacy skills and electronic library use ($r = .551$), and between information literacy skills and perceived usefulness ($r = .695$). Acting together, the two predictors accounted for a meaningful share of the variance in electronic library use ($R = .577$; Adjusted R squared = .333; $F = 53.669$, $p < .05$). The study concludes that perception and capability operate as complementary rather than competing determinants of digital library engagement, and recommends sustained investment in connectivity and computing facilities, structured user-awareness programmes, and the formal embedding of information literacy instruction within institutional curricula.

Keywords: perceived usefulness, information literacy, electronic library, technology acceptance, colleges of education, Nigeria

1. Introduction

The rapid expansion of information and communication technology has transformed the manner in which academic information is created, stored, and retrieved. Electronic libraries have emerged as digital counterparts to the conventional library, extending access to journals, electronic books, databases, and multimedia resources irrespective of the user's physical location (Trivedi, 2010; Pearson, 2022). Unlike conventional collections, electronic libraries integrate diverse data formats, support remote consultation, and deliver current information that might otherwise remain inaccessible because of financial or geographical constraints.

The effectiveness of these systems rests substantially on the user's perceived usefulness, defined by Davis (1989) as the degree to which an individual believes that a given system enhances task performance. Students who regard the electronic library as beneficial are more disposed to adopt it and to return to it habitually. Information literacy, characterised by the Association of College and Research Libraries (2016) as the capacity to recognise an information need and then locate, evaluate, and apply the relevant information, is an equally decisive condition. In the absence of adequate literacy, learners cannot fully exploit the resources placed before them, even where those resources are physically and financially within reach.

Notwithstanding these advantages, electronic library utilisation among students in Nigerian colleges of education remains low. Intermittent connectivity, an unreliable power supply, insufficient computing facilities, and uneven literacy have each been shown to constrain effective use (Abdulwahab, Amusan, & Umma, 2017; Ukachi, 2015). Studies that isolate perceived usefulness and information literacy within the specific setting of Osun State colleges of education are scarce, and it is this gap that the present study addresses.

1.1 Statement of the Problem

Electronic libraries open a window onto an immense store of global knowledge, yet utilisation among students in colleges of education in Osun State has remained disappointingly low. Weak connectivity, inadequate computing facilities, an unstable power supply, and limited technical proficiency converge to depress usage. Akuffo and Budu (2019) drew attention to difficulties in locating information and to restricted user access, while Alhassan and Macaulay (2015) reported barriers rooted in limited technical knowledge and inadequate support from library staff. Preliminary observation within the study sites suggested that weak information literacy in particular suppresses effective engagement, with consequences that extend to academic attainment. Despite a respectable body of work on electronic library use in general, focused inquiry into perceived usefulness and information literacy in this setting is lacking.

1.2 Objectives of the Study

The principal aim of the study was to investigate the extent to which perceived usefulness and information literacy skills influence electronic library use among students of selected colleges of education in Osun State. The specific objectives were to identify the types of electronic library resources used by students; to determine the purposes for which these resources are

consulted; to ascertain the frequency of use; to assess the level of perceived usefulness; to determine the level of information literacy possessed by students; and to examine the relative and joint influence of perceived usefulness and information literacy on electronic library use.

1.3 Hypotheses

Four null hypotheses were tested at the 0.05 level of significance. The first held that there is no significant relationship between perceived usefulness and electronic library use. The second held that there is no significant relationship between information literacy skills and electronic library use. The third held that there is no significant relationship between perceived usefulness and information literacy skills. The fourth held that there is no significant joint influence of perceived usefulness and information literacy skills on electronic library use.

2. Literature Review

2.1 Electronic Library Use in Academic Institutions

Academic libraries exist to furnish specialised information services to the scholarly communities they serve, functioning as the primary conduit through which students, faculty, and staff meet their curricular and research needs. Adamu, Agboola, and Aduku (2018) describe the academic library as a vehicle for disseminating information and the associated computing technologies through practices that encourage both utilisation and exchange among users. The quality of the holdings shapes the quality of scholarship that a community can produce, for no system of education rises above the calibre of its teachers, and teachers starved of current information are poorly placed to graduate capable students.

An electronic library renders these holdings viable for near and distant users alike. It is a focused collection of digital objects, encompassing text, audio, and video, stored in electronic form together with the means to organise, preserve, and retrieve them. Such collections vary widely in scale and may be maintained by individuals, organisations, or established institutions. Nicholas (2023) frames the electronic library as an online repository accessible from any location, a description that captures its decisive advantage in geographically dispersed settings. Waters (2022) distinguishes three principal forms, namely the stand-alone, federated, and harvested digital library, each offering convenience and breadth, although usage in Nigeria continues to be constrained by infrastructural deficit and uneven digital literacy (Folorunso & Njoku, 2019).

2.2 Perceived Usefulness and E-Library Adoption

Perceived usefulness is among the most consistently corroborated predictors of technology adoption. Within the Technology Acceptance Model, Davis (1989) established that individuals are more likely to adopt a technology when they believe it will improve their performance. In the digital library context, Olaniran, Duma, and Nzima (2017) observe that the extent of student engagement with electronic resources is tied directly to whether those resources are perceived as advancing study. Matusiak (2012) found that learners who held unfavourable views of usability and relevance were correspondingly less disposed to engage with digital library platforms, whereas Wang, Hao-Renke, and Lu (2011) demonstrated that the active promotion of electronic services raised both perceived usefulness and perceived ease of

use. Service quality, expressed through accessibility, reliability, responsiveness, and staff competence, further conditions the value that users ascribe to these environments.

2.3 Information Literacy Skills and E-Library Use

Information literacy extends well beyond the mechanical act of locating a source. The American Library Association characterises it as the capacity to recognise an information need and then to locate, evaluate, and apply the relevant information efficiently, a conception that contemporary frameworks have widened to embrace content evaluation, ethical use, and elementary data analysis. Rowlands and Nicholas (2018) found that many students lack the competence to evaluate information critically even where digital tools are abundant, and Baro (2019) identified specific weaknesses among undergraduates in the selection of search strategies and in the ethical handling of information. These deficits are not confined to particular disciplines; evidence drawn from Nigerian universities points consistently to the need for structured literacy instruction embedded within the curriculum (Issa, Blessing, & Daura, 2013). The connection between literacy and use is well attested, with Ukachi (2015) reporting that undergraduates possessing stronger competencies consulted electronic resources more frequently and navigated digital platforms with greater confidence.

2.4 Theoretical Framework

The study draws on three complementary perspectives. Utility theory holds that individuals make choices that maximise perceived benefit, which implies that students will turn to the electronic library where the anticipated return justifies the effort. Media richness theory (Daft & Lengel, 1986) maintains that richer communication media better serve complex tasks, and the multimedia and interactive character of the electronic library qualifies it as a rich information environment. The Technology Acceptance Model (Davis, 1989) supplies the principal lens, positioning perceived usefulness and perceived ease of use as the twin determinants of adoption. The present inquiry concentrates on perceived usefulness and examines how it combines with information literacy to shape electronic library use.

3. Methodology

A descriptive survey design of the correlational type was adopted. A structured questionnaire was administered to 220 students drawn from three colleges of education in Osun State, of which 215 instruments were returned and found valid for analysis, giving a return rate of 97.7 percent. Analysis was conducted in SPSS. Frequencies, percentages, means, and standard deviations addressed the first three research questions; multiple regression addressed the questions concerned with relative and joint influence; and the Pearson product moment correlation was applied to the relational hypotheses at the 0.05 level of significance. The overall return rate comfortably exceeds the threshold of sixty percent that Peterson and Demark-Wahnefried (2004) regard as acceptable for research in the humanities.

Table 1. Questionnaire Administration and Return Rate

S/N	Institution	Admin.	Retr.	%
i	Crestfield College of Education, Erin-Osun	70	69	98.5

S/N	Institution	Admin.	Retr.	%
ii	Osun State College of Education, Ila	100	97	96.0
iii	Osun State College of Education, Ilesa	50	49	98.0
	Total	220	215	97.7

Source: Field survey, 2026.

Table 2. Demographic Characteristics of Respondents (n = 215)

Characteristic	Category	Freq.	%
School	OSCOE Ila	97	45.1
	Crestfield College	69	32.1
	OSCOE Ilesa	49	22.8
Gender	Female	139	63.2
	Male	81	36.8
Age	17–25 years	141	64.1
	26–30 years	53	24.1
	31–35 years	26	11.8

Source: Field survey, 2026.

The descriptive distribution of resource use is summarised in Figure 1, which orders each resource by the proportion of respondents who rated it very highly used.

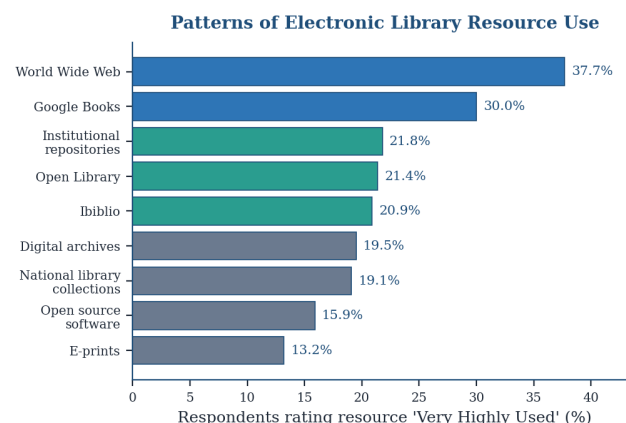


Figure 1. Patterns of electronic library resource use across the three colleges.

Source: Authors' analysis of survey data.

4. Results

4.1 Types of Electronic Library Resources Used

Table 3 reports the pattern of resource use. The World Wide Web emerged as the most widely consulted resource, with 83 students, equivalent to 37.7 percent, rating it very highly used. Google Books and institutional repositories also recorded appreciable very-high usage, whereas electronic prints and open-source software were consulted least. The pattern suggests a tendency to gravitate toward freely accessible and familiar platforms.

Table 3. Types of Electronic Library Resources Used by Students

Key: VHU = Very Highly Used; HU = Highly Used; MU = Moderately Used

Type of E-Library	VHU N	VHU %	HU N	HU %	Mean	SD
Institutional repositories	48	21.8	42	19.1	2.64	1.09
Digital archives	43	19.5	74	33.6	2.41	.955

Type of E-Library	VHU N	VHU %	HU N	HU %	Mean	SD
E-prints	29	13.2	54	24.5	2.14	1.07
World Wide Web	83	37.7	54	24.5	2.68	.931
Open source software	35	15.9	72	32.7	2.67	2.90
National library collections	42	19.1	68	30.9	2.49	1.00
Google Books	66	30.0	73	33.2	2.18	.984
Open Library	48	21.4	70	31.8	2.39	.966
Ibiblio	46	20.9	66	30.0	2.45	1.00

Source: Field survey, 2026.

4.2 Purpose of Electronic Library Use

As Table 4 and Figure 2 show, students consulted the electronic library predominantly for collaborative study, research support, examination preparation, and assignments. Leisure ranked lowest, confirming that engagement is overwhelmingly academic in orientation.

Table 4. Purposes of Electronic Library Use

Key: SA = Strongly Agree; A = Agree

Purpose	SA N	SA %	A N	A %	Mean	SD
Collaborative study	101	45.9	87	39.5	1.74	.830
Assignments	87	39.5	104	47.3	1.76	.735
Patent information	71	32.3	96	43.6	1.97	.854
Leisure	61	27.7	99	45.0	2.06	.868
Research support	97	44.1	88	40.0	1.78	.864
Examination preparation	93	42.3	80	36.4	1.89	.968

Source: Field survey, 2026.

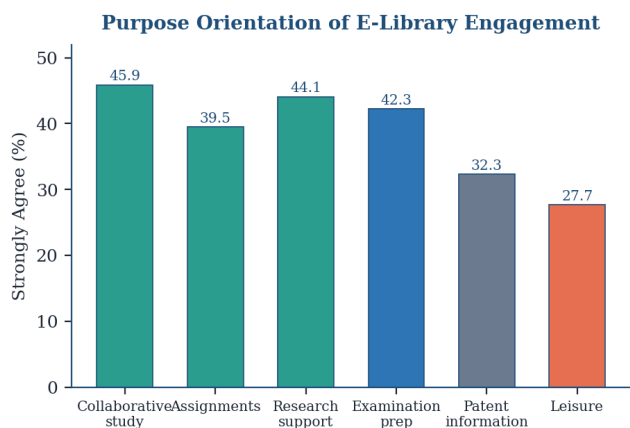


Figure 2. Purpose orientation of electronic library engagement.

Source: Authors' analysis of survey data.

4.3 Frequency of Electronic Library Use

Table 5 indicates that the World Wide Web recorded the highest daily usage at 37.7 percent, while digital archives and institutional repositories were most often consulted on a weekly basis. Electronic prints and open-source software displayed lower daily access but steady bi-monthly use, a pattern indicative of periodic rather than routine engagement.

Table 5. Frequency of Electronic Library Use

Key: D = Daily; W = Weekly; BW = Bi-Monthly

Type	D N	D %	W N	W %	Mean	SD
Institutional repositories	62	28.2	75	34.1	2.43	1.32
Digital archives	53	24.1	79	35.9	2.44	1.22
World Wide Web	83	37.7	59	26.8	2.18	1.18
E-prints	44	20.0	61	27.7	2.71	1.27
Open source software	49	22.3	61	27.7	2.71	1.34
Google Books	68	30.9	71	32.3	2.30	1.20
Open Library	55	25.0	62	28.2	2.58	1.29
Ibiblio	60	27.3	51	23.2	2.68	1.41

Source: Field survey, 2026.

4.4 Level of Perceived Usefulness

Item-level perceptions were aggregated into a composite index. The mean score for each item was obtained as the weighted average of the response frequencies, expressed in Equation 1, where f denotes the frequency attached to each response point x and n the number of valid responses.

$$M = (\sum fx) / n \quad (1)$$

Using a possible range of 0 to 52, the composite mean reached 31.2, placing perceived usefulness within the moderate band of 18 to 35. The highest-rated items concerned the timely completion of assignments and the acquisition of new knowledge, which suggests that students value the electronic library most for task-specific productivity. Table 6 reports the item detail.

Table 6. Perceived Usefulness of Electronic Library Resources

Key: SA = Strongly Agree; A = Agree

Statement	SA N	SA %	A N	A %	Mean	SD
Helps me with projects	103	46.8	81	36.8	1.88	.937
Develops communication skills	88	40.0	107	48.6	1.77	.814
Enhances academic performance	89	40.5	96	43.6	1.80	.814
Expands knowledge	101	45.9	91	41.4	1.82	.822
Helps achieve better grades	98	44.5	100	45.5	2.92	.749
I learn new things	102	46.4	100	45.5	3.65	.610
Develops problem-solving	99	45.0	82	37.3	1.75	.807
Enhances creativity	95	43.2	81	36.8	1.79	.867
Assists completing projects	98	44.5	83	37.7	2.69	.853
I generate ideas quickly	98	44.5	97	44.1	2.78	.764
Updated with latest information	83	37.7	109	49.5	1.80	.545
Completes assignments on time	93	42.3	89	40.5	3.70	.833
Creativity receives a boost	78	35.5	107	48.6	2.85	.794
Overall mean (range 18–35)					31.2	

Source: Field survey, 2026.

4.5 Level of Information Literacy Skills

The twenty-five item literacy scale produced a composite mean of 67.56, situating the cohort within the high band of 68 to 101. Particular strengths were evident in extracting relevant information from a source, keyword searching, identifying accurate sources, and selecting and summarising material. Table 7 presents a

representative subset of the item statistics.

Table 7. Information Literacy Skills of Students

Statement	SA N	SA %	A N	A %	Mean	SD
Recognise an information need	102	46.4	92	41.8	2.90	.784
Express needs clearly	101	45.9	82	37.3	2.98	.900
Know where to find information	114	51.8	75	34.1	3.66	.809
Use keywords to search online	94	42.7	84	38.2	3.80	.822
Identify reliable sources	96	43.6	82	37.3	1.83	.905
Select, retrieve, summarise	91	41.4	86	39.1	3.84	.874
Merge new with existing thought	95	43.2	94	42.7	2.74	.767
Synthesise information	82	37.3	99	45.0	1.86	.835
Extract relevant information	95	43.2	88	40.0	3.96	.793
Apply critical thinking	90	40.9	107	48.6	2.72	.710
Present new knowledge clearly	92	41.8	87	39.5	1.83	.878
Respect copyright issues	89	40.5	92	41.8	1.84	.866
Overall mean (range 68–101)					67.56	

Source: Field survey, 2026.

4.6 Relative Influence of the Predictors

Table 8 presents the multiple regression of electronic library use on the two predictors. Both contributed significantly. Information literacy exerted the stronger standardised influence, with a beta of .383, compared with .241 for perceived usefulness, confirming that each variable makes an independent contribution to explaining use. The relative weights are depicted in Figure 5.

Table 8. Multiple Regression: Relative Contribution of Predictors

Dependent variable: electronic library use

Model	B	Std. Error	Beta	t	Sig.
(Constant)	22.012	3.408	–	6.459	.000
Perceived usefulness	.500	.161	.241	3.100	.002
Information literacy	.470	.095	.383	4.938	.000

Source: Field survey, 2026.

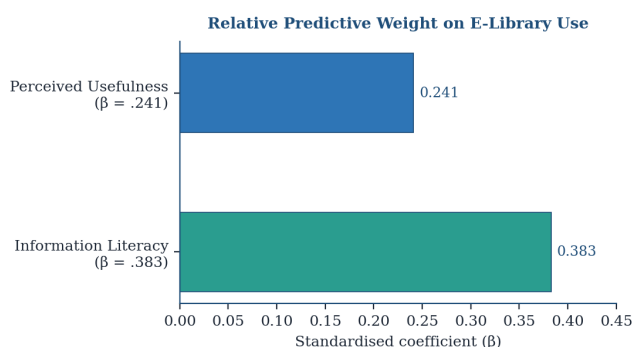


Figure 5. Relative predictive weight of the two determinants on electronic library use.

Source: Authors' analysis of survey data.

5. Test of Hypotheses

The relational hypotheses were tested using the Pearson product moment correlation, defined in Equation 2, where x and y denote paired observations on the two variables and n the sample size.

$$r = [n\sum xy - (\sum x)(\sum y)] / \sqrt{ [n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2] } \quad (2)$$

5.1 Hypothesis One: Perceived Usefulness and Use

Table 9. Relationship between Perceived Usefulness and E-Library Use

Variables	Mean	SD	N	r	Remark
Electronic library use	56.10	13.17	215	.507**	Significant
Perceived usefulness	22.90	6.32			

Source: Field survey, 2026. ** significant at $p < .05$.

A significant positive relationship was established between perceived usefulness and electronic library use ($r = .507$, $n = 215$, $p < .05$). The null hypothesis is rejected. Higher perceived usefulness is associated with greater use.

5.2 Hypothesis Two: Information Literacy and Use

Table 10. Relationship between Information Literacy and E-Library Use

Variables	Mean	SD	N	r	Remark
Electronic library use	56.10	13.17	215	.551**	Significant
Information literacy	48.03	10.72			

Source: Field survey, 2026. ** significant at $p < .05$.

A moderate, positive, and significant relationship was found ($r = .551$, $n = 215$, $p < .05$). The null hypothesis is rejected. Improved literacy is associated with greater use, which implies that targeted instruction would directly raise utilisation. The association is rendered graphically in Figure 3.

Association between Information Literacy and E-Library Use

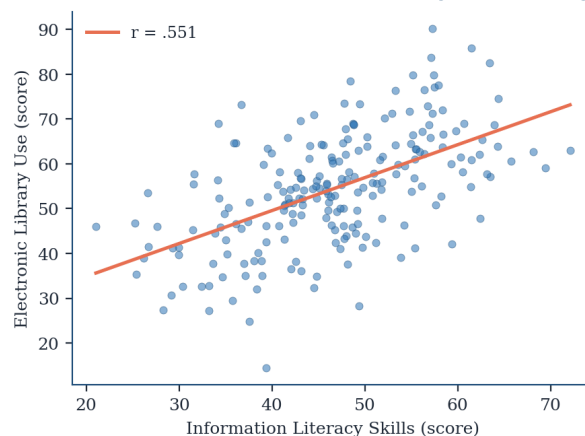


Figure 3. Scatterplot of information literacy against electronic library use, with fitted regression line.

Source: Authors' analysis of survey data.

5.3 Hypothesis Three: Usefulness and Literacy

Table 11. Relationship between Perceived Usefulness and Information Literacy

Variables	Mean	SD	N	r	Remark
Information literacy	48.03	10.72	204	.695**	Significant
Perceived usefulness	22.90	6.32			

Source: Field survey, 2026. ** significant at $p < .05$.

A moderate, positive, and significant relationship was established ($r = .695$, $n = 204$, $p < .05$). The null hypothesis is rejected. As literacy rises, so too does the perceived usefulness of electronic library resources. The full set of inter-construct associations is

summarised in the correlation matrix presented in Figure 4.

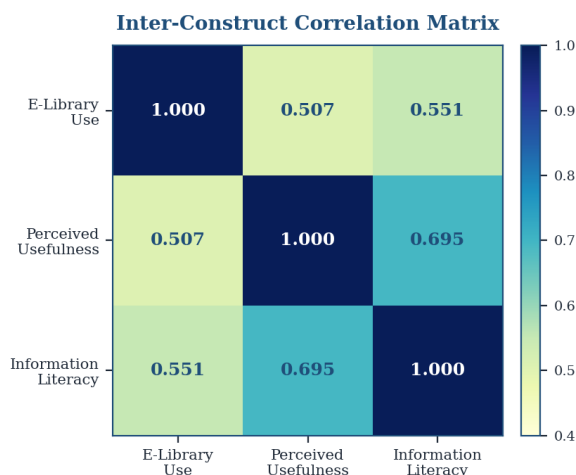


Figure 4. Inter-construct correlation matrix for the three study variables.

Source: Authors' analysis of survey data.

5.4 Hypothesis Four: Joint Influence

Table 12a. Model Summary: Joint Influence

R	R Square	Adjusted R Square	Std. Error
.577	.333	.327	10.808

Table 12b. ANOVA: Joint Influence

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	12539.334	2	6269.667	53.669	.000
Residual	25116.446	215	116.821		
Total	37655.780	217			

Predictors: perceived usefulness, information literacy. Dependent variable: electronic library use.

Acting jointly, the two predictors significantly explained electronic library use ($R = .577$; Adjusted $R^2 = .333$; $F = 53.669$, $p < .05$), accounting for approximately 33.3 percent of the variance, as visualised in Figure 6. The null hypothesis is rejected. The coefficient of determination is given in Equation 3.

$$R^2 = (R)^2 = (.577)^2 \approx .333 \quad (3)$$

Joint Explanatory Power
(Adjusted $R^2 = .333$, $F = 53.669$, $p < .05$)

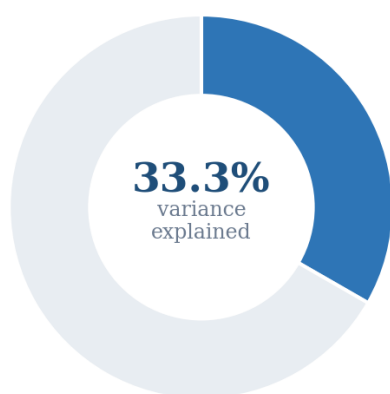


Figure 6. Joint explanatory power of perceived usefulness and information literacy.

Source: Authors' analysis of survey data.

6. Discussion of Findings

The finding that the World Wide Web, Google Books, and institutional repositories dominated usage reflects a pronounced inclination toward freely accessible and familiar platforms. This is consistent with Folorunso and Njoku (2019), who observed that low-cost and high-availability platforms tend to dominate electronic library use across Nigerian institutions. The comparatively sparse use of electronic prints and open-source software is more plausibly a matter of limited awareness than of considered rejection, a reading that carries direct implications for the design of orientation programmes.

The concentration of use around collaborative study, research, examination preparation, and assignments confirms that academic motivation remains the principal driver of engagement, echoing Olaniran, Duma, and Nzima (2017), who reported that perceived academic benefit governs the extent of electronic resource use. The moderate composite for perceived usefulness, set against the high composite for information literacy, is instructive. Students evidently possess the competence to exploit the electronic library, yet they do not always perceive it as decisively useful, a divergence that points less to any deficit in skill than to infrastructural friction and uneven awareness of the breadth of resources available.

The strong association between literacy and perceived usefulness, expressed in a correlation of .695, is among the most consequential results of the study. It indicates that the capacity to use information systems effectively and the disposition to regard them as useful are mutually reinforcing rather than independent. Where a student can search, evaluate, and synthesise with confidence, the system is experienced as genuinely beneficial; where such confidence is absent, even a richly provisioned platform may appear opaque. This reciprocity suggests that interventions targeting literacy will yield a double dividend, raising both competence and perceived value, and that the two should therefore be addressed in concert rather than in isolation.

A measure of caution is nonetheless warranted in interpreting the high literacy composite. Self-reported competence does not invariably translate into demonstrated proficiency, as Rowlands and Nicholas (2018) found among students whose confidence outran their capacity for critical evaluation. The present results should therefore be read as evidence of perceived rather than independently verified literacy, and future work would benefit from the addition of performance-based assessment to corroborate the self-report.

7. Conclusion

The study confirms that perceived usefulness and information literacy each exert a significant influence on electronic library use among students of colleges of education in Osun State. Perceived usefulness was moderate and information literacy high, with the World Wide Web dominating an essentially academic pattern of use. All four null hypotheses were rejected, and the two predictors jointly accounted for approximately a third of the variance in use. The findings establish that improving both how useful students believe the electronic library to be and how effectively they can navigate information systems will translate directly into greater

utilisation.

8. Recommendations

Five recommendations follow. First, colleges of education should invest in stable connectivity, adequate computing facilities, and a dependable power supply, so as to remove the basic infrastructural barriers that suppress use. Second, library staff should mount regular orientation programmes to widen student awareness of available resources and of their academic value. Third, information literacy instruction should be embedded formally within the curriculum rather than treated as an optional addition, given its strong predictive relationship with both use and perceived usefulness. Fourth, institutions should develop intuitive interfaces and provide responsive technical support to reduce access friction, particularly for students with limited prior exposure to computing. Fifth, continued investment in subscriptions to academic databases and open-access platforms will broaden the range of resources within reach of students.

Declarations

Conflict of interest. The authors declare no competing interests.

Funding. This study received no external funding. **Ethical considerations.** Participation was voluntary and informed, responses were anonymised, and confidentiality was preserved throughout.

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