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# The usage of Electronic Databases in Academic Libraries in Ghana. The Experience of Ghana Communication Technology University Library (GCTUL)

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## ABSTRACT

This study examines the use of electronic databases (e-databases) by faculty members of the Ghana Communication Technology University (GCTU). The study used a descriptive research method. Copies of the questionnaire were used for the data collection. Due to the manageable population, no sampling method was used in this study. The Statistical Package for the Social Sciences (IBM-SPSS 21.0) was used for data analysis. The results showed that most faculty members were aware of the availability of databases in the library. Additionally, the findings established that Emerald, as well as Taylor and Francis, were ranked highly in terms of availability and accessibility. The study identified problems such as difficulty in downloading information as well as poor internet connectivity. Based on the results, the study recommended that library management should address all the challenges that users encounter as soon as possible.

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## 1. Introduction

The development of the internet in libraries has made it possible to access information electronically. Information can now be generated in larger quantities beyond the library's walls and accessed remotely through the internet. The extraordinary development of technology has suddenly changed the information-seeking behaviour of library users. Academic libraries now recognise the value of electronic databases as a means of providing information and meeting the needs of their patrons. Technology has enabled academic libraries to introduce various services and resources to support the traditional

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method of service delivery (Obiamalu et al., 2021). The use of electronic databases is made easier by the development of information and communication technology (ICT) and its acceptance in library service delivery. Tella et al. (2018) defined an electronic database as a collection of computerised information records consisting of organised pieces of information placed in records.

Electronic databases contain information from a variety of disciplines and are available and accessible via the internet at any time of day. These databases are collections of information organised to serve a specific purpose and can be searched and retrieved through computers (Encyclopaedia Britannica, 2020). According to Teymourikhani (2017), online databases contain more scholarly works than other online resources. Electronic databases are now necessary for research because they give researchers remote access to a wider range of relevant information. Emmasiegbu and Anaehobi (2021) expressed that the use of databases in the academic setting had both direct and indirect effects on academic staff efficiency. In addition to teaching and community service, academic staff members are expected to conduct high-quality research and impart ideas relevant to their areas of expertise. In the digital transformation, e-books, e-journals, e-databases, and e-magazines have replaced print books, magazines, and journals as knowledge centres (Habiba & Ahmed, 2020). Instead of heavily relying on print-based materials, academic libraries now use online resources. Electronic databases have been added to libraries' collections to support print-based journals. Electronic databases are subscribed to by some institutions through consortiums, vendors, or the publishers themselves. As part of a discount package, all members of the Consortium of Academic and Research Libraries in Ghana (CARLIGH) are eligible to subscribe to some databases at a moderate price. The first eleven databases are paid for by all CARLIGH members; the remaining 12 to 20 databases are subscribed to by individual institutions and are optional. The CARLIGH institution members' mandatory and optional subscriptions to the databases are listed in Table 1 below. The Ghana Communication Technology University Library's (GCTUL) mission, vision, and goals are no exception. The internet and other technologies in the 21st century have revolutionised library collections since information is accessible anytime and anywhere without limitation, as mentioned earlier by Toteng et al. (2013) and Obiamalu et al. (2021). There is a need for e-databases to supplement print-based information. The management of GCTUL has invested a colossal amount of money in acquiring e-databases despite the economic meltdown and dwindling library budgets. This was echoed earlier by Gakibayo et al. (2013), whose study found that many university libraries invested largely in subscribing to e-resources. In Ghana, academic libraries have come together and formed a consortium named the Consortium of Academic and Research Libraries in Ghana (CARLIGH) to subscribe to e-databases that its members can access at a reduced cost (Asamoah-Hassan, 2011). The GCTUL is one of the members of CARLIGH, which grants them access to e-databases through an annual subscription. The cost of the subscription is not justified by the low utilisation of the resources. It could also imply that GCTU faculty members are unaware that these resources are available at the library. An earlier observation by the researchers revealed that the university had invested a considerable sum of money in a subscription to these resources, with a general expectation that lecturers would use them fully.

However, the preliminary observation by the researchers revealed that the use of databases has declined sharply, which might be attributed to various factors. This affirmed studies by Okunoy (2020;

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Lawal, 2021; Obiamalu et al., 2021) that there was a decline in the use of electronic database resources in the libraries they studied. Certain factors might have hindered the maximum use of these databases in the library. It is good to note that the costs and goals of the database subscription are to enrich and improve teaching, learning, and research at the university. Even though researchers like Bong and Chen (2021; Obiamalu et al., 2021; Shihab & Mini, 2021; Afolabi et al., 2020; Ansari, 2020; Casselden & Pears, 2020; Sivakami & Rajendran, 2019; Dehghani et al., 2018; Enis, 2018; Robertson, 2015; Seale, 2014) have conducted similar studies at the global and continental levels. At the local level, Adanu (2019; Larson, 2017; Kwadzo, 2015; Kwafoa et al., 2014) have also conducted studies in this area, but none of these studies targeted GCTUL to find out the usage level of electronic databases at the library. This has motivated the researchers to determine the extent of the use of electronic databases at the GCTUL. Table 1 below buttresses a statement by Bashurun et al. (2017) that the FUTO Library subscribes to approximately eight databases, some of which are free and some require subscription fees before accessing the resources.

The categories of e-databases to which university libraries must pay subscription fees before gaining access are listed in Table 1 below.

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Table 1. Names of databases for CARLIGH members

S/N	Name of databases	INSTITUTION
1	EBSCOhost	All members
2	Sage Journals (Premier)	All members
3	Wiley	All members
4	Taylor and Francis	All members
5	Sage Research Methods Online	All members
6	Credo Reference	All members
7	Institute of Physics	All members
8	Emerald	All members
9	World Bank e-library	All members
10	Project Muse	All members
11	Cambridge Uni. Journal	All members

Optional Subscribed to by Individual Institutions

12	Annual Review	Individual Institutions
13	ACM	Individual Institutions
14	ECONLIT	Individual Institutions
15	SABICAT	Individual Institutions
16	EZ Proxy	Individual Institutions
17	Hein Online	Individual Institutions
18	IEEE	Individual Institutions
19	RomoteXs	Individual Institutions
20	ProQuest E-books	Individual Institutions

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### *1.1 The Objectives of the Study*

The main objective of this study is to examine electronic database usage in academic libraries in Ghana, specifically at the Ghana Communication Technology University library, Accra campus.

### *1.2 Research Questions*

- RQ1. Are GCTU faculty members aware of the library's e-databases?
- RQ2. Are e-databases available to faculty members in the library?
- RQ3. Do faculty members have access to e-databases?
- RQ4. What are the challenges users face when using e-databases in the library?

## 2. Literature Review

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### *2.1 Level of Faculty awareness of e-databases in the Library*

According to Online Encyclopedia Britannica (2019), an e-database is a collection of structured data or information that can be searched and retrieved quickly using a computer system. Index/bibliographic databases (like Scopus, CiteSeerX, WorldCat, and Ulrichsweb) and full-text databases (e.g ScienceDirect, Springer, and EBSCOhost) make up the majority of these databases. There are additional types such as subject-based databases (like IEEE, Library and Information Science Source, Business Source Complete, AGORA, and PubMed/Medline). Meta-databases (such as ConsensusPathDB, Entrez, and Neuroscience Information Framework). Statistics/numeric databases (like Bureau of Labor Statistics, American Factfinder - US Census Bureau, and Balance of Payments Statistics - IMF eLibrary). Image/video databases (such as Pickup Image, 3D online action dataset and Audio-Visual Event (AVE) dataset). Subscription databases (e.g. IEEE, Emerald and ScienceDirect). Free/Low-cost databases (e.g. ScienceOpen, CORE, Eric, Jstor, HINARI and PLOS) (Izuagbe, et al., 2022).

Electronic databases in higher learning institutions aim to facilitate teaching, learning, and research activities. They also support print-based materials to achieve the vision of their parent institution. Onifade et al. (2013) asserted that academic libraries support teaching, learning, and research in the learning environment. Thus, electronic databases can enhance academic work at the university. When faculty members become aware of the extensive use of these resources, it improves their teaching performance and other academic-related activities at the university. Ansari (2020) indicated that awareness is information about or a perception of a circumstance, reality, recognition, realisation, and acknowledgement of a new development. Library users will find it difficult to access the available databases without full knowledge of their existence. It is a task for academic libraries to create awareness about and market these available databases through continuous user education and orientation. Sivakami and Rajendran (2019) surveyed awareness, access, and usage of e-resources among faculty members in Arts and Science colleges in India. The findings revealed that both male and female users were aware of the availability of e-resources. The quality of research output by lecturers in the university community is assessed by their awareness of electronic databases. Even though other factors, such as training, availability, accessibility, and the skills of the user or computer literacy level, may positively or negatively influence the successful use of these databases, poor internet challenges may negatively influence it. Shihab and Mini (2021) conducted a study at the University of Kerala on attitudes, awareness, and use of e-journals by academics and researchers. Their findings revealed that the vast majority of respondents are aware of the University of Kerala's electronic journal services. A similar study by Okiki (2012) found that out of 113 respondents, 61 (54%) reported low awareness of e-resources, compared to 52 (46%) who reported a high level of awareness of EIRs. This deduces that the level of awareness of e-resources is relatively low.

At Delta State University, electronic scholarly journal databases were underutilised, coupled with a lack of awareness of the existing resources (Baro et al., 2011). In the view of Anaraki and Babalhavaeji (2013), there was a lack of adequate information about databases and a lack of training

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at Banaras Hindu University. Ansari (2020) observed the use and awareness of e-resources among research scholars at Banaras Hindu University. The results revealed that most respondents were aware of e-resources and used them to update their knowledge and acquire information for teaching and research. Faculty members of NSTU, the Public University of Bangladesh, depend on search engines to access information (Habiba et al., 2022). However, other factors, such as training, should not be neglected (Seale, 2014; Bong & Chen, 2021). Dehghani et al. (2018) conducted a study on the use of online databases by faculty members and graduate students at Shahid Beheshti University. Their results showed a wide use of electronic databases. The high patronage of the resources was due to their awareness and existence.

The awareness of databases is the main predictor that determines the level of usage of the resources by faculty members in the intellectual community. The resources may be available in the library, but a lack of awareness will not justify their existence and relevancy in the learning environment. The demand for reliable information by faculty members is steadily becoming more sophisticated owing to the emergence and adoption of the internet in libraries; therefore, creating awareness is paramount. Faculty members' level of database use may be affected in a positive or negative way depending on their level of awareness.

## *2.2 Electronic databases available to faculty members*

Academic libraries all over the world are now working hard to keep their position as the information hub or citadel of information and to provide excellent services to their patrons. As a result, timely and relevant information is essential. Subscriptions enable universities to acquire electronic databases and make them accessible to their valued patrons (Adanu, 2019). Subscriptions to online databases, which can be accessed through the internet, are one of the most efficient methods for providing university libraries with access to electronic resources (Gakibayo et al., 2013a). Indeed, many of the activities that take place in academic libraries today have been altered as a result of technology.

The influx of technology has led to a rapid increase in information creation, processing, acquisition, change in information-seeking behaviour, and use of information (Case & Given, 2016). Users can access databases from their libraries without strict conditions or restrictions. An investigation was carried out by Ahmad and Mohammad (2020) at Imam Abdulrahman Bin Faisal University. They established that faculty members benefited from using electronic resources and that users could access them. They went on to say that 93.7 per cent of respondents used the resources, with 56.8 per cent searching for Arabic information and 25 per cent searching for English information. According to the study, users' academic work was enhanced and their knowledge was updated with the help of the resources. Everyone in the learning community, regardless of gender, educational level, or geographical location, should have access to knowledge. Bello and Chioma (2020) assessed the globalisation of libraries and information services and the level of ICT adoption in academic libraries in Oyo State, Nigeria. Their findings revealed that faculty members had access to E-GRANARY, EBSCOHOST, JSTOR, JAYPEE DIGITAL, HINARI, AGORA, OARE, the Institutional Repository (IR), and the Directory of Open Access Journals (DOAJ). Providing authentic and dependable resources

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that meet the information demands of the learning community is a requirement for academic libraries. University libraries are considered the heart of the institution. Therefore, they must meet users' expectations in discharging their duties. Afolabi et al. (2020) studied information literacy skills and the availability of information resources among the academic staff of Lead City University, Nigeria. At Lead City University, they discovered a link between resource availability and research productivity, which accounted for  $R = 0.457$ ,  $F = 27.565$ , and  $P < 0.05$ .

In the view of Mwantimwa et al. (2017), some institutions of higher learning in Tanzania used IP addresses to restrict users who stayed off-campus. Placing restrictions on electronic databases and other harsh conditions will lead to low usage. Libraries must ensure that users can use the available databases. The end product of good library services may be quality education. Libraries are service organisations; they are not for profit-making; they are light bearers in the university community that lead to knowledge. Priyadharshini et al. (2015) indicated that a higher proportion of respondents at the Agricultural College and Research Institute in Madurai were aware of available e-resources in the library. Eighty per cent of postgraduate students and 93.3% of faculty members used the library's subscribed resources. The usage rate could be associated with efforts made by the library staff in awareness creation, user education, or faculty members' orientation to the resources. The library staff efforts to raise awareness, such as through orientation or user education about the availability of the resources, could be linked to the rate of usage at the Agricultural College and Research Institute in Madurai.

### *2.3 Electronic databases accessible to faculty members*

Everyone needs reliable information for personal growth and academic improvement to survive in this information-overloaded age. Academic achievement and good decision-making are enhanced by having access to accurate, efficient, and reliable information. Additionally, it improves the research output of higher education institution faculty members. Users can access full-text documents and save time by using electronic resources, which are convenient and can be accessed remotely (Casselden & Pears, 2020; Enis, 2018).

Mansour (2017) stated that individuals should have free access to information without limitations or stringent conditions attached to their usage. Any severe conditions associated with using resources in the library may render their use irrelevant. It is necessary to remove all barriers to access in an academic library for users to have full access to the resources there.

Lecturers at South-West University, Nigeria, are cognizant of the advantages of various electronic databases for research and teaching (Eiriemiokhale, 2020). Larson (2017) indicated that the inability of users to use passwords for some databases, the length of time it takes to search the databases, the inability to freely access some current articles, slow internet connectivity, and the lack of access to databases outside the university campus were the main obstacles users faced in their attempt to access databases. In some academic libraries, these poor conditions may deter patrons from using the databases and visiting the library. Faculty members' interests must be considered when planning to subscribe to an electronic database for a specific library. The library should train all users on how to use the available resources, in addition to providing academic staff with high-quality services.

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The vast majority of academic staff at the University of Calabar, Nigeria, have access to online databases for research and teaching activities (Ani & Edem, 2012). Sahu and Singh (2013) found that 46% of Indian academic staff and astrophysicists accessed the various e-databases daily, followed by 29% who did so weekly. Electronic databases cover a variety of subject areas and are written by a variety of publishers and experts. They have emerged as a result of the introduction of technology into libraries.

The use of these databases differs significantly from print materials. Eyiolorunshe and others (2017) suggested that faculty members at Nigeria's Landmark University knew of the resources and could easily access them. Similarly, at Bunda Agricultural University in Malawi, faculty and students frequently utilised AGORA, HINARI, and OARE (Robertson, 2015). According to the study, users benefited from free access to high-quality information to support twenty academic programs. Mishra et al. (2019) surveyed health science researchers regarding their needs and information-seeking behaviour in educational contexts. The results revealed that most (85.7%) of the respondents' access and use electronic resources for research, teaching, and learning. Knowledge acquisition, learning, and research depend on the availability and accessibility of relevant information resources (Unegbu et al., 2017). This study aims to address the myriad factors that influence the use of electronic databases in academic libraries, including awareness, availability, accessibility, and challenges.

#### *2.4 Challenges users face when using e-databases*

Although faculty members may be willing to utilise the e-databases for academic purposes, nonetheless, some difficulties may thwart their efforts while using and accessing the resources. The widespread adoption of technology in libraries indicates that this is innovation-driven. Awareness, availability, and accessibility of these resources are intended to expand the scope of academic activities in the university. For these resources to receive maximum use, it is incumbent on the library staff to ensure that the databases are highly patronised without barriers. Electronic databases have excellent potential for research, teaching, and learning, but many hindrances may tend to retard their usage in the library. A lack of training, poor infrastructure, and high usage costs hinder the full use of database resources (Chukwusa, 2020; Prangya & Rabindra, 2015).

Lack of constant power supply, lack of online access, lack of technical know-how, dislike of reading from a screen, and lack of awareness were listed as reasons lecturers in federal university libraries in Nigeria were unable to effectively use electronic databases (Olarongbe & Ibrahim, 2017). The library's ability to maintain a steady supply of electricity impacts the frequency with which electronic databases are used; therefore, full utilisation of the resources will be hindered by any factor that hinders the supply of sufficient power.

At the University of Cape Coast, faculty members pay fees to access electronic resources; a lack of adequate guidance, poor internet services, inadequate knowledge of ICT devices, methods for searching and retrieving online resources were all obstacles to the full use of electronic databases (Kwafoa et al., 2014). Similarly, faculty members at Babcock University in Ogun State, Nigeria, complained of unstable power, inadequate orientation and training, and a lack of awareness of

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the library's electronic resources (Madukoma et al., 2014). Leonard et al. (2020) studied the use of electronic resources by law lecturers at the University of Namibia.

According to their findings, users face some obstacles, including a lack of promotion of the resources, inadequate internet bandwidth, a lack of awareness, and infrequent training on how to access and successfully search for electronic information. Gupta Raza (2011) and Kumar (2006) found that users encounter difficulties such as issues with connectivity, slow internet speeds, and a lack of training when accessing online databases. Academic libraries' services and users' information needs have changed due to the rise of electronic databases and their widespread acceptance. Libraries must ensure that these resources serve the needed purpose and accomplish the university's mission. Notwithstanding the importance of e-databases, their usage is fraught with problems such as poor internet connectivity, difficulty in accessing full-text articles, unreliable power supply, inaccessibility of e-resources outside university premises due to IP address limitations, insufficient ICT infrastructure, inadequate skills and knowledge (Mwantimwa et al., 2017). Although electronic databases have gained recognition in teaching, learning, and research in the university environment, there are still obstacles to overcome, including staff and user training, the problem of subscription renewal, as well as staff and users' computer skills. The literature review demonstrates that academic libraries are increasingly adopting electronic databases. They also help faculty members with their teaching and research activities.

However, the use of electronic databases in academic libraries has been constrained by issues related to awareness, accessibility, availability, and inadequate internet services.

### *2.5 Conceptual framework*

The utilization of electronic databases has been influenced by the incorporation of technology into libraries. The framework presents the relationship between awareness, availability, accessibility, and challenges associated with the use of online databases in the library. It shows that the use of databases among faculty members at GCTU depends to a large extent on the availability and accessibility of the resources in the library. Furthermore, the framework suggests that all types of information, regardless of the format in which it was created, ought to be readily available and accessible. The e-databases are independent, and the dependent variables are awareness, availability, accessibility, and challenges. The mere awareness of e-databases does not make their usage complete; awareness must interact with availability because users can be aware of the resources but the resources may not be available at the appropriate time for use. Subsequently, there must be an interaction between availability and accessibility. Accessibility and availability do not mean users can access them automatically without being aware. However, several issues need to be addressed, including the poor quality of library internet services, the inadequacy of databases, issues with user searching skills, and adequate facilities that will enhance database usage. The framework stressed further that faculty members would be discouraged from using the databases if there were no interactions between dependent and independent variables. The above framework shows that the influence of electronic databases in academic libraries hinges on the awareness, availability, accessibility, and difficulties associated with the use of online databases.

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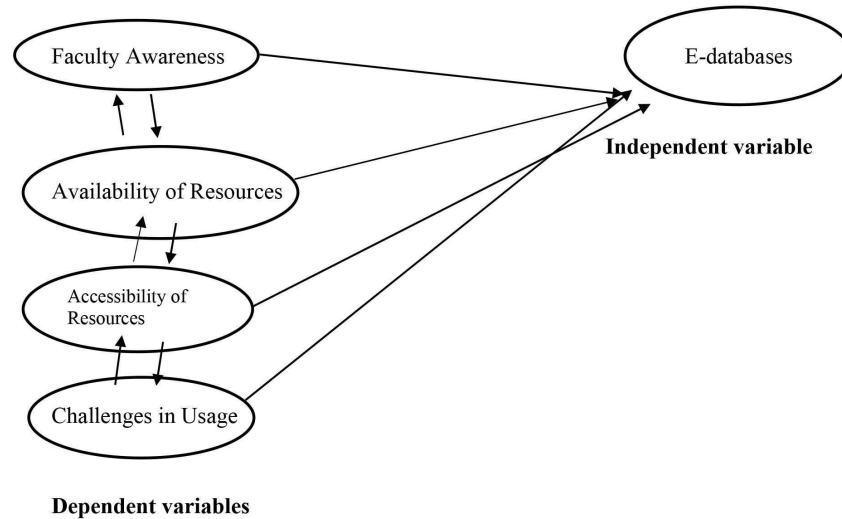


Fig. 1. Conceptual framework  
Source; Authors' Construct (2022)

### 3. Methodology

This study adopted a descriptive research design. Descriptive research describes a particular phenomenon or event and its characteristics in terms of a specific population sample (Nassaji, 2015). From the perspective of Siewew (2019), the descriptive design provides an essential profile of a phenomenon originating from an organisation, person, or industry. Ary et al. (2018) stated that a research design is a general procedure chosen to integrate distinctive parts of a study in a coherent way to address the research problem. The population for this study consisted of all faculty members in the GCTU. All 104 faculty members participated in the study. To this effect, no sampling method was used in this study due to the small population size. According to Bernard (2012) if a population of a study is less than two hundred (200) the entire population should be used for the study. The researchers obtained a list of faculty members from the Registrar's office through a permission letter before the administration of the questionnaire. The researchers informed the respondents about the purpose of the study. The respondents were also assured of their confidentiality. Based on the goals of the study, a questionnaire was used to collect data. According to Yap and Lock (2017) and Yap and Skitmore (2018), the Relative Importance Index (RII) and Likert scale options ranging from one to five were used to construct the questions and collect data from respondents based on their relative importance.

The researchers administered one hundred and four (104) copies of the questionnaire to faculty members in their offices and faculty lounges to solicit information with the assistance of two students. Ninety-six (96) were returned and deemed valid for the analysis; this translates to a response rate

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of 92.3%. Thus, Section A of the questionnaire focused on respondents' bio-data; Section B examined faculty awareness of e-databases in the library. Section C addressed the availability of electronic databases to faculty members. Section D gathered information on the accessibility of faculty used e-databases, and Section E dealt with the challenges associated with using e-databases. The administration and retrieval of the copies of the questionnaire took two weeks. All the participants were informed about the purpose of the study. They were also assured of their confidentiality. The Statistical Package for Social Sciences (IBM-SPSS 21.0) was used to analyse data based on the study's objectives. The Relative Importance Index (RII) was also used to rank the level of availability and accessibility of the e-databases to ascertain the preference and ranking of the databases. The results are presented in the tables.

#### 4. Results

To help the researchers comprehend and appreciate the population under study, background information was gathered from respondents. The data that was gathered from the respondents is shown in Table 2. The data shows that out of 96 respondents, 57 (59.4 %) were males, and 39 (40.66%) were females. The results indicate that the number of male lecturers was higher than their female counterparts.

Table 2. Demographic characteristics

Level of awareness	Frequency	Percentage (%)
Male	57	59.4
Female	39	40.6
Total	96	100

Source: Field survey, 2022

##### *4.1 Faculty members' awareness of e-databases in the library*

The respondents were asked to indicate their awareness of electronic databases in the library. The results showed that most of the respondents, 69 (71.9%), were aware of the existence of electronic databases, 24 (25%) indicated somewhat aware, and only 3 (3.1%) stated that they were unaware of the databases' presence in the library. From the results, one can state that most lecturers are aware of the library's electronic databases.

Table 3. Faculty members' awareness of e-databases in the Library

Level of awareness	Frequency	Percentage (%)
Aware	69	71.9
Somewhat aware	24	25
Unaware	3	3.1
Total	96	100

Source: Field survey, 2022

#### 4.2 Availability and accessibility to electronic databases

The researchers decided to rank the answers provided on the least and most preferred databases used by the faculty members using the Relative Importance Index (RII). This was important because the question sought to determine the degree to which an item is preferred. Tables 4 and 5 used a scale of 1 to 5, which explains a minimum value of 1 to the highest value of 5; thus, 1 = low; 2 = very low; 3 = moderate; 4 = high; and 5 = very high. The Relative Importance Index (RII) was calculated based on the following equation:

$$RII = \text{Weight Sum } (W1 + W2 + W3 + W4 + W5) / A * N$$

$$\text{Relative Importance Index: } \sum w = \frac{W1}{AN} + \frac{W2}{5N} + \frac{W3}{5N} + \frac{W4}{5N} + \frac{W5}{5N}$$

Where:

W: weighting as assigned by each respondent on a scale of 1 to 5. One (1) is the least, and five (5) is the highest. A: the highest weight (in this case, 5 is the highest);

N: Total number of respondents.

$$\text{Hence: } (1 \times 12) + (2 \times 9) + (3 \times 23) + (4 \times 32) + (5 \times 20) = 12 + 18 + 69 + 128 + 100 = 327$$

$$= 327 / 5 \times 96 = 480; 327 / 480 = 0.681; RII = 0.681.$$

Table 4. Type of electronic databases available to faculty members

	Availability of e-databases	The ranking is given by the Respondents						
		1	2	3	4	5	RII	Rank
1	Emerald	12	9	23	32	20	0.681	1st
2	Taylor and Francis	10	19	14	30	23	0.677	2nd
3	Ebscohost	12	15	21	32	16	0.652	3rd
4	Sage Research Methods	14	20	18	23	21	0.635	4th
5	IEEE	22	15	13	20	26	0.627	5th
6	Wiley	16	23	19	17	21	0.608	6th
7	Institute of Physics	17	25	19	12	23	0.598	7th
8	Cambridge Uni. Journal	24	17	12	25	18	0.592	8th
9	Sage Journals (Premier)	29	11	15	23	18	0.579	9th
10	Credo Reference	26	21	11	15	23	0.575	10th
11	World Bank e-library	28	17	12	24	15	0.560	11th
12	Project Muse	16	31	7	12	14	0.452	12th

Source: Field survey, 2022

#### 4.3 Types of electronic databases available to faculty members

The preference and ranking of the availability of electronic databases that the Ghana Communication Technology University Library (GCTUL) offers users are shown in Table 4.

The results showed that Emerald ranked first as the most available database with a score of (RII = 0.681), while Taylor and Francis ranked second with a score of (RII = 0.677). Furthermore, Ebscohost ranked 3rd with a value of (RII = 0.652), and Sage Research Methods was ranked fourth with a value of (RII = 0.635). The IEEE and Wiley ranked fifth and sixth with (RII = 0.627) and (RII = 0.608), respectively. The findings show that most faculty members used the Emerald database more than the other databases, as highlighted in the study. This shows that Emerald Database, Taylor and Francis, and Ebscohost were more accessible to users.

#### 4.4 Electronic databases accessible to faculty members

Table 5 describes the accessibility ranking level of electronic databases used by faculty members at GCTU. It is clear from Table 5 that Taylor and Francis ranked first with a value of (RII = 0.706) as the most accessible databases, followed by Emerald Database, which ranked second (R = 0.692), and Ebscohost ranked third with a value of (RII = 0.679). At the same time, IEE and the Institute of Physics were ranked fourth and fifth with (RII = 0.656) and (RII = 0.644), respectively.

The high rate of accessibility of these resources may be attributed to the library's effort to transition from print databases to electronic databases. The findings confirm the extent to which technology is transforming library services.

Table 5. Electronic databases accessible to faculty members

S/N	Accessibility of e-databases	The ranking is given by the respondents					RII	Rank
		1	2	3	4	5		
1	Taylor and Francis	12	28	45	84	170	0.706	1st
2	Emerald	7	24	93	88	120	0.692	2nd
3	EBSCOhost	10	32	54	120	110	0.679	3rd
4	IEEE	16	38	45	56	160	0.656	4th
5	Institute of Physics	11	48	63	52	135	0.644	5th
6	Wiley	18	44	42	80	115	0.623	6th
7	Sage Journals (Premier)	7	52	93	85	60	0.619	7th
8	Project Muse	22	32	60	92	75	0.585	8th
9	Cambridge Uni. Journal	22	32	57	108	60	0.581	9th
10	Sage Research Methods	27	38	51	48	105	0.560	10th
11	World Bank e-library	20	54	45	81	65	0.552	11th
12	Credo Reference	42	30	36	52	70	0.479	12th

Source: Field survey, 2022

#### 4.5 Challenges faced in accessing e-databases

People are bound to encounter challenges to some extent under certain circumstances.

The respondents were asked to indicate the challenges they encounter when utilising the databases. Table 6 showed that the majority of respondents, 42 (43.8%) indicated poor internet connectivity, followed by (21.8%) who showed difficulty downloading information, while difficulty accessing full-text content accounted for (14.6%). The use of e-databases in the library is hindered by a variety of factors, including poor internet connectivity, which must be addressed.

Table 6. Challenges faced in accessing e-databases

	Frequency	Challenges	Percentage (%)
Poor internet connectivity	42		43.8
Difficult to download information	21		21.8
Difficult to access full-text	14		14.6
Lack of knowledge of databases usage	7		7.3
Lack of training to access databases	5		5.2
Limited access points	4		4.2
Persistent power outages	3		3.1
Total	96		100

Source: Field survey, 2022

## 5. Discussion of findings

Academic libraries are considered the university's information hub; therefore, they must make their resources known to the learning community. The primary goal of this study was to determine faculty members' use of electronic databases (e-databases) in the Ghana Communication Technology University Library. The findings showed a high level of awareness of e-databases in the GCTU library. This assertion indicates that faculty members used these databases for their information needs. It could also indicate that the library has been exerting sufficient effort to encourage patrons to use the resources, resulting in a high level of awareness. The results did not support previous studies by Leonard et al. (2020) and Baro et al. (2011), whose findings revealed a low level of awareness of the existing electronic databases. The findings again disagreed with Okiki's (2012) assertion that faculty members at the College of Health Sciences of the University of Ghana were unaware of some databases available at the Library.

In this era of information overload, libraries must market their resources and make them available for extensive use. The findings indicated that the Emerald and Ebscohost databases were more available to users. The results corroborate with Ahmad and Mohammad (2020), whose study revealed that electronic resources were available to Imam Abdulrahman Bin Faisal University users, and faculty members benefited from their use. The results of this study again confirmed a similar survey by Priyadarshini et al. (2015) that a higher proportion (93.3%) of faculty members at the Agricultural College and Research Institute, Madurai, admitted that e-resources are freely available to them. This result agrees slightly with Bello and Chioma (2020) finding that E-GRANARY, EBSCOHOST, JSTOR, JAYPEE DIGITAL, HINARI, AGORA, and OARE with the Directory of Open Access Journals (DOAJ) and Institutional Repository (IR), were available to faculty members.

The accessibility of e-databases is the key to maximising the maximum usage of resources.

The findings revealed that Taylor and Francis, Emerald database, and Ebscohost were easily accessible to users. On the contrary, an earlier study by Larson (2017) indicated that users of online databases faced problems such as no access to the databases outside the university campus and difficulty accessing some current articles freely, among others. It is anticipated that faculty members in institutions of higher learning will improve the quality of their teaching and research by making efficient and effective use of electronic databases. Therefore, the management of the academic library must immediately identify any issues that prevent patrons from making good use of the library's electronic databases.

Globally, academic libraries must eradicate all barriers to ensure that their resources are available and accessible to their users. The findings established that most of the respondents, 42 (43.8%), indicated difficulty in downloading information, followed by poor internet connectivity, which impeded the use of e-databases in the library. The results support Leonard et al. (2020; Gupta, 2011; Kumar, 2006) studies which concluded that users faced challenges such as poor internet connectivity, low promotion of resources, low levels of awareness, and infrequent training for users. Academic libraries should come up with new ways to help users get the most out of databases, despite the challenges listed above.

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## 6. Conclusion

The core function of any academic library is to facilitate teaching, learning, and research by providing users with current and relevant information. Technological advancement has revolutionised how academic libraries function and the types of services they deliver to patrons. The use of electronic databases in academic libraries today is one of the transformations that libraries have witnessed over the past decades by technology. In today's information age, academic libraries offer access to information through electronic databases. The effective utilization of electronic databases is influenced by their awareness, availability, and accessibility. In the academic setting, there has been a significant rise in the demand for electronic databases by researchers, lecturers and students.

This study presents the findings of electronic databases (e-databases) usage by faculty members at the Ghana Communication Technology University (GCTUL). The study established that most of the faculty members are aware of the availability of electronic databases in the library. They also depend heavily on them for their research purposes and teaching.

It emerged from the findings that databases are available and accessible in the library, and most faculty members have access to them. However, the study identified some key challenges, such as difficulty in downloading information, limited access points, and difficulty accessing the full text.

In conclusion, this study has provided a deeper insight into using electronic databases in academic libraries at the global, continental, and national levels.

## 7. Recommendations

The following recommendations are made to library management:

It emerged from the findings that most faculty members were aware of the databases in the university library. The study recommends that library management should intensify its marketing strategy to create more awareness regarding the use of databases since a section of users is not aware. The library should use various social media platforms, emails, and university websites to market these databases to academic staff or the entire university community. All databases must be available and accessible without restrictions or stringent conditions, such as passwords or fees attached to their usage. There should be periodic training and retraining of faculty members on the use of electronic databases. Library management must address all the challenges that obstruct the use of databases in the library as soon as possible. For instance, the issues of difficulty in downloading, poor internet access, poor power supply, limited access, and the inability of lecturers to access the full text. The study suggests that there should be a standby power supply or generator to provide constant power in the library.

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