Examining Online Academic Information Seeking and Access Behaviours of Postgraduate Students in a Ghanaian University: A Case Study

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Abstract— This study examined the online academic information seeking and access behaviours of postgraduate students in a Ghanaian public university with the aim of establishing the various factors that influence such behaviours as well as their perceptions of the systems through which they access the information. 143 students enrolled in postgraduate programmes at the university during the 2018-19 academic year participated in the study. A quantitative research approach featuring a descriptive case study strategy was adopted. Data were collected with the aid of survey questionnaire, designed using a modified version of Wilson's (1999) Model in Information Behaviour Research framework, and administered online. Response data were analysed using descriptive statistics. The study established that students were generally aware of the existence of electronic library resources and also had the requisite abilities and skills to access and use the resources. This notwithstanding, majority of the students hardly accessed and used the resources on a regular basis. The study discusses the factors underpinning these behaviours within the context of contributing towards the evolution of best-practice frameworks for deploying digital academic information for easy access and use by students in the developing world.

Keywords— Electronic Libraries, Digital platforms, Journal databases, Postgraduate students, Online Information seeking behaviours, Ghana.

I. INTRODUCTION

In the present era of information and knowledge revolution (Barrett, 2005), information has become an indispensable resource crucial for advancement in knowledge, decision making, avoidance of duplication of efforts and technology transfer. Information is considered as an important resource that contributes towards the development of a nation (Barrett, 2005). In recent times, information resources have increased, dramatically. Based on this paradigm shift, students in general have access to lots of information to satisfy their academic needs for learning and knowledge acquisition. Mudasir and Shabir (2014) state that the learning process is now increasingly based on the ability to discover and access knowledge, and to apply it in problem solving. Ability to identify and locate the relevant, appropriate, credible and timely information in the digital environment is therefore a critical skill that students, particularly those in the higher levels of education, must possess. Students manifest these skills in the behaviors they exhibit as they seek and access academic or scholarly information in the online environment. Understanding this online information seeking and retrieval behaviors of students within particular contexts will therefore afford educators and providers of digital scholarly content the opportunity to develop strategies and processes that will better guide students to attain their information seeking goals. It is therefore not surprising that, the study of online information seeking behaviors among various categories of students, researchers and practitioners has grown rapidly along with the growth of the Internet and World Wide Web (Bruce 2014; Case and Given 2016; Ford 2015). It is within this context that this study was conducted among postgraduate students at a private university college in Ghana.

The study thus had the objective of answering the following questions:

1. What is the level of postgraduate students' awareness of the existence of the various online academic resources provided the institution's library?
2. How frequently do postgraduate students access the various online platforms containing the academic resources provided by the institution's library?
3. What perceptions do the institution's postgraduate students hold regarding the usability of the various e-resources platforms?
4. How beneficial do postgraduate students find the online academic resources provided by the institution's library?
5. What challenges do students in the institution typically encounter during their online academic information seeking activities?

II. LITERATURE REVIEW

"Information seeking is a human process that requires adaptive and reflective control over the actions of the information seeker. Information seeking behavior (ISB) results from the recognition of some needs, perceived by the user, who as a consequence makes demand upon on formal system such as libraries and information centers, or some other person in order to satisfy the perceived information need. It is concerned with the interactive utilization of the three basic resources namely, people, information and system. Further in order, to satisfy the information needs, the user actively undergoes the information seeking process" (Singh & Satija, 2006).

Wilson (1999), sees information behavior to be 'those activities a person may engage in when identifying their own needs for information, searching for such information in any way, and using or transferring that information'. Information seeking behaviors in academic institutions most of the student's access information sources for research, teaching and learning needs. Users face multiple problems while accessing information sources. Availability of information sources in multiple formats and in large numbers has posed challenges to the user community.

Besides the efficient use of online information through the Internet towards the learning process is now increasingly based on the ability to discover and access knowledge, and to apply it in problem solving. Bopp and Smith (2011), stipulate that academic library serve faculty, staff and students with print and non-print resources such as books, journals, microforms, videos, DVDs and any other form of information storage from the past that enhance teaching, learning and research works. Bopp and Smith (2011), emphasize that libraries play three basic roles which include collections, organization and direct assistance now referred to as reference service which has existed since time immemorial to date with resources and documents for delivering information needs of its community. For academic libraries to adequately address the changing information needs of its students, they need to know more about the information that students use and value and what influences their information searching and obtaining.

Barrett (2005) emphasizes that user studies continue to be an important area of library research, as studying the information-seeking habits of specific user groups has contributed to the development of a variety of library services. There are several types of users of an information system, they may be identified by the type of information needed and nature of a library. For example, in an academic library, the primary users are students, teachers, researchers, administrators etc. The primary users in a special or research library can be researchers, planners, policymakers, and scientists. In the public library environment, anyone can be a user. Thus, they can be children, students, housewives, literates etc. (Onwuchekwa and Jegede, 2011).

Academic institutions are playing a critical role in developing information literates and lifelong learners for intellectual and career development of students. The American Library Association (ALA) Presidential White Paper (1998) points out that, to have expertise in information-seeking, one should be information literate. Information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand. Hence, information behavior as it applies to postgraduates and challenges they face as they seek/search for information to support their research activities.

Online information seeking behavior is the active process of obtaining data from the Internet. This definition arises from the perception that any activity an individual engages in on the Internet constitutes information seeking. Aina (2004), opined that "the information seeking behavior of a user depends on education, access to libraries and the length of time a user wishes to devote to information seeking". Huvila (2013) describes an information source as any carrier of information or anything a user perceives as capable of informing.

In recent times, the availability of e-resources in a university library is very common (Sharma, 2009). But their proper and maximum use is a matter for discussion. Speed of availability and the ease of accessibility of information cause the users to use electronic resources more frequently (Naidu, Rajput, & Motiyani, 2007). A survey conducted by Naqvi (2007) indicates that the use of e-resources in Jamia Milia Islamia is not satisfactory and needs constant guidance/orientation to enhance their usage. In a snapshot of this Renwick (2004) asserts that there must be greater promotion of the library's e-resources. The foregoing discussion brings to the fore, the fact that though academic libraries are offering their patrons a wealth of digital scholarly resources which are

readily accessible online, the question of the abilities of such patrons, particularly students, to effectively access and use these resources to their benefit needs to be fully addressed. Understanding the various factors that influence particular users' information seeking and access behaviours will thus afford academic librarians the opportunity to best position their e-resources for optimal access and use.

III. METHODOLOGY

Study Setting & Participants

Ghana Communication Technology University (GCTU) is a Ghanaian Public University that offers programmes leading to the award of undergraduate and postgraduate degrees in the science and business fields. With a student population of over 7000, the University prides itself as being in the forefront of harnessing the affordances of Information & Communications Technologies (ICTs) for effective education delivery and research.

In January 2010, the institution entered into a collaborative partnership with Coventry University (CU) in the United Kingdom, to offer graduate (Master's degree) programmes in Project Management, Business Administration, Management Information Systems, Supply Chain Management and Oil & Gas Management, to students in Ghana. The initiative has become very popular among the Ghanaian populace as it offers students the opportunity to stay in Ghana and earn a UK University degree, and also at a much cheaper cost.

To ensure that students who enroll to pursue these partnership programmes have access to contemporary and cutting-edge scholarly material that will meet their learning needs, GCTU's library works with several agencies and institutions globally to make such content readily accessible to them in digital format through several web-based platforms and portals. These are:

- The GCTU Library website
- GCTU's digital institutional repository
- GCTU's ERP that holds E-textbooks
- A collection of several e-Journal databases
- The Coventry University library website and e-resources

Through these platforms therefore, students have access to all recommended course readings as well as research works published in most of the top-ranked journals in their respective fields.

The library also trains these students periodically to equip them with the necessary digital literacy skills to

enable them search, locate and access material that are of relevance to them. A cohort of these graduate students who, by the end of 2019, had been undertaking their studies for at least one year and were therefore well exposed to the library's digital collections, constituted the target population of this study.

Study Design and Data Collection

A descriptive cross-sectional survey was used to explore the students' online academic information seeking and access habits, their perceptions of the usability of the various technology systems through which they access the e-resources, as well as their perceived beneficial effects of the resources they access. Data were collected using an online questionnaire which was designed using Google Forms, and a link sent via email to individual students who constituted the target population, a total of 160 in number. This also represented the sample size of the research. The questions were adapted from aspects of Wilson's (1999) model of Information Behaviour Research framework and comprised Likert-type questions with a range of 1-5 that measured respondents' ability to seek and locate the library's online digital resources, their frequency of access of these resources, as well as their levels of satisfaction with the availability, relevance and currency of the resources. A few other questions solicited the participants' demographic data. Questions were reviewed by an expert in the Library and Information Science field and minor modifications made.

A two-week duration, beginning the last week in February 2020 was given for participants to respond to the questionnaire, and a reminder was sent after one week. At the close of the exercise, 143 participants fully completed and submitted their responses, a return rate of 89%. This is quite appreciable, given that online survey questionnaires typically record low patronage. It is however in keeping with suggestions made by Shih & Fan (2008) and Vance (2011) that student populations are more likely to respond to surveys than the general population.

Given that the response rate had exceeded the recommended sample size (which was determined by the Raosoft sample size calculator to be 114 for a population of 160 at 95% confidence level), the researchers did not see the need to continue data collection. Response data were exported from the Google Form application as Microsoft Excel files, and Excel was used to clean, sort and analyse the data with simple descriptive statistics.

IV. RESULTS AND DISCUSSIONS

Table 1 - Demographic Information of Questionnaire Respondents (N=143)

	Frequency	Percentage
Gender		
Male	88	61%
Female	54	38%
Prefer not to say	1	1%
Programme of Study		
MBA Finance	26	18.2%
MSc. Engineering & Management	23	16.1%
MSc. Supply Chain Management	23	16.1%
MBA. Petroleum Economics & Finance	18	12.6%
MSc. Management Information Systems	17	11.9%
MSc. IT for Management	12	8.4%
MSc. Business Decision Management	8	5.6%
MSc. Engineering Project Management	7	4.9%
MSc. Oil & Gas Management	7	4.9%
MBA Logistics	2	1.4%

Table 1 shows the demographic data of the respondents. Out of the total of 143 respondents, 88, representing 61% were male whilst 38% were female. This male:female ratio of approximately 1.6:1 aligns perfectly with the male:female ratio of the target population which is in the region of 1.5:1. In this regard, it was fair to conclude that, gender wise, the data shows that the respondents fairly represented the target population, and indicates that the male and female graduate students participated fairly equally in the survey.

The demographic data also shows that students enrolled in all the programmes offered in the institution participated in the study with percentages commensurate with the percentages of students enrolled in the programmes. Hence MBA Finance being the most popular programme registered the highest number of respondents, whilst MBA Logistics being the least subscribed programme returned a participation rate of just 1.4%

Research Objective One: Students' level of awareness of the existence of the various resources

Given that the efficient location and use of any web-based resource begins with the user being aware of the existence of such a resource in the first place, the first objective of the study was to determine the students' level of awareness of the existence of the various online academic information resources provided by the library. In this regard, a question was posed to participants to indicate whether or not they were aware of the existence of the individual web-based platforms that they could use to access academic information. All respondents answered this question and Fig. 1 displays the response data.
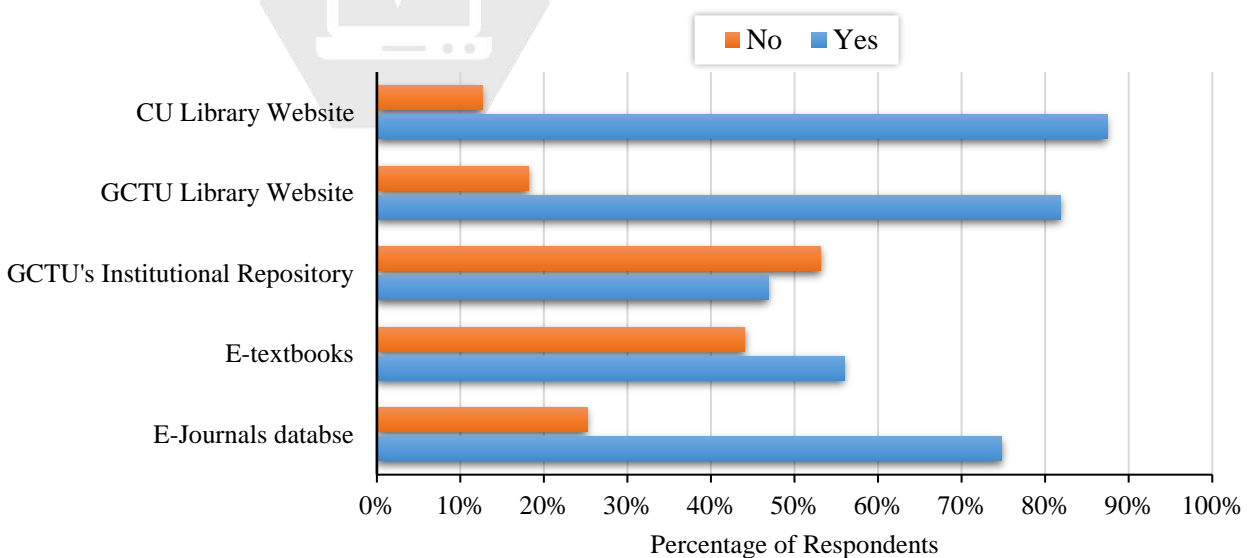

Fig. 1. Students' level of awareness of the existence of the various resources

As the data in Fig. 1 shows, for each of the platforms, except for the institutional repository, more respondents indicated that they were aware of the availability of the e-resources on those platforms. The resources made available to students through the website of the partner university's (i.e. Coventry University) recorded the highest percentage (87%) by way of students being aware of its existence. This is quite understandable, given that the students tend to see themselves as belonging more to the partner foreign university than the local Ghanaian institution that is hosting them.

On the other hand, the existence of GCTU's own institutional digital repository was the least noticed by the students as 53% of the respondents indicated that they were unaware of its existence. This can be attributed to the fact that the system was still in a development phase, and might not have been highlighted during the digital literacy training sessions.

On average however, 69% of respondents indicated that they were aware of the existence of all the resource platforms available to them, with the remaining 31% indicating they were aware of the existence of at least one of the platforms under study. This finding corroborates that of Egberongbe (2011) whose study showed that 71% of postgraduate students in a Nigerian university were well aware of the e-resources available to them. Similarly, Akpojotor's (2016) investigation of the awareness and usage of electronic information resources among postgraduate students of library and information science in Southern Nigeria, established high levels of awareness of the existence of the various e-resources.

On the contrary, a Dukper et al's (2018) study of undergraduate students at another Ghanaian university revealed that only 49% of the students interviewed indicated that they were aware of the existence of electronic library resources in the institution. Likewise, Ayele & Sreenivasarao (2013), in their study on users' acceptance and use of e-library resources, found only 21.38% of the respondents indicating they were well aware of the existence of e-library services.

The comparatively higher percentage of postgraduate students indicating their awareness of the existence of digital library resources in this, and similar studies (e.g. Ankrah & Atuase, 2018) should however not be surprising, given that the research requirements of postgraduate students necessitate their need to be aware of the existence of relevant academic resources.

Objective two: Students' frequency of access of e-resources

Access and use of a library's e-resources do not depend only on availability and user awareness, but also on other factors such as users' access to computers, as well as their ability to search, navigate and locate the appropriate resources on the Internet. The second objective of this study was thus to determine what the students will indicate is the frequency at which they accessed the e-resources through the respective platforms. The questionnaire thus included a set of statements requesting respondents (who indicated that they were aware of the existence of at least one of the library's e-resource platforms) to indicate, on a Likert scale, how frequently they logged onto the respective platforms (whose existence they were aware of), to seek and access digital scholarly material. The response range was: (1) Never, (2) Rarely i.e. about once a semester, (3) Occasionally i.e. about once a month, (4) Regularly i.e. about once a week, and (5) Frequently i.e. 3 or more times a week. Response data were thus treated as Likert-type data; hence frequency of access was computed as percentages as shown in Table 2.

Table 2. Students' Frequency of access of e-resources through the platforms

	Number of Respondents	Never	Rarely or Occasionally	Regularly or Frequently
CU library Website	125	30%	49%	21%
GCTU Library Website	144	27%	49%	24%
GCTU's Institutional Repository	118	58%	31%	11%
E-Textbooks via ERP	130	31%	36%	33%
Journal Databases	136	27%	51%	22%
Average		35%	43%	22%

The data in Table 2 shows that, on average, only about 22% of the respondents indicated that they accessed the e-resources on a regular basis, i.e. at least once a week. Though quite a low percentage, as postgraduate students are expected to be frequent users of available scholarly material, it is not out of the ordinary as a similar study in another Ghanaian university by Dukber et al. (2018) reported that 37% of respondents indicated that they accessed the library's e-resources once a week, whilst another by Yebowaah & Plockey (2017) reported an even lower value of 7.7% of respondents indicating that they accessed their library's e-resources on a weekly basis. Similarly, Adeniran (2013) reports of a low usage

rate of electronic information resources available in a University Library in Nigeria, though most of the users were aware of the existence of those resources.

An issue that will however be cause for concern to the library and the university at large, is the appreciable percentage of students (35% on average) who indicated that they had never accessed the e-resources made available to them through the various platforms. This outcome is quite surprising given that the study participants had been studying in the university for well over one year, and it is difficult to imagine why this will be the case. Indeed, Bakare et. al (2015) report of close to 65% of postgraduate students at the Federal University of Agriculture, Ogun State, Nigeria, indicating that they access the library's e-resources at least on a weekly basis.

It is however worth mentioning that students in the present era have access to several sources of scholarly material, particularly those offered through free open access repositories. For example, a survey by Ankrah & Atuase (2018) on the use of electronic resources by postgraduate students at the University of Cape Coast, Ghana, saw close to 60% of the respondents indicating that they preferred to access scholarly information from other sources such as Google search, Google scholar and Yahoo. Oni et al (2016) also suggest that the inability of university libraries to meet the information requirements of some library users might be compelling them to use personal collections when conducting research.

Thus firm conclusions cannot be drawn from the findings of this study that a relatively small percentage of postgraduate students in the institution (i.e. 22%) generally access and use online scholarly material on a regular basis.

Objective 3: Students' perceived usability of the various e-resources platforms

As research works have demonstrated that perceived usability has an influence on users' loyalty to online platforms (Flavián, Guinalíu & Gurrea, 2006), the third objective of the study was to establish the students' perceived usability of the platforms they use to access the library's e-resources. Perceived usability within the context of the study referred to the ease of accessing, navigating, searching and retrieving the relevant academic information from the various platforms. A question in the questionnaire thus contained a series of statements to which respondents were required to indicate their level of agreement with each on a Likert Scale. Responses ranged from (1) Strongly Disagree, (2)

Disagree, (3) Neutral, (4) Agree and (5) Strongly agree. Mean values of the responses to each statement were calculated as shown in Table 3.

Table 3: Students' perceived usability of the various e-resources platforms (N=143)

Statement	Mean	SD
I can easily search and locate relevant information on the platforms I access	3.67	0.25
The interfaces of the various platforms I use are intuitive and easy to navigate	3.12	0.54
I use the systems confidently without asking for technical assistance	3.49	0.69
I can download the resources I need from the platforms I use	3.05	0.33
Average:	3.26	0.45

The data in table 3 paints a not too rosy picture of the students' perceived usability of the e-resource platforms provided by the library, as mean values of their responses to all the statements are significantly below the "Agree" mark. This finding should however not be surprising because, as shown in Table 2 above, a mere 22% of the respondents indicated that they accessed these platforms on a regular basis, whilst 35% indicated that they had never accessed any of these platforms, confirming the earlier assertion that perceived usability has an influence on actual usage of online systems (Flavián, Guinalíu & Gurrea, 2006).

One other factor that might be accounting for the students' low perceived usability of the library's e-resources platforms is the issue of unawareness reported earlier. With 31% of the respondents indicating that they were not aware of the existence of all the e-resources platforms made available to them, it is only natural that when it comes to the question of perceived usability of these platforms, they might be basing their judgement on only the particular platforms they know of and access. This is however a subject for further investigation as no other study has been sighted that specifically addresses the issue of perceived usability of electronic library resources.

Objective 4: Students' Perceptions of the Beneficial Effects of Accessible E-Resources

Having established the levels of students' awareness of the existence of the institution's library e-resources, their frequency of access and use of these resources, and their perceived usability of the various platforms, the fourth objective of the study was to determine the perceptions the students hold with regard to how

beneficial they generally find all the e-resources they access and use. Beneficial here was operationalized as the extent to which the various e-resources they accessed were perceived to be contributing to the achievement of their academic goals.

A set of Likert scale statements in the questionnaire thus requested respondents (specifically those who indicated in the earlier responses that they accessed and used the e-resources) to indicate their perceptions of the beneficial effects of the respective e-resources they access and use. The response range was: (1) Highly Unbeneficial (2) Unbeneficial (3) Neutral (4) Very Beneficial and (5) Highly Beneficial. Figure 2 below is a graphical representation of mean values representing the extent of the students' perceptions on the issue.
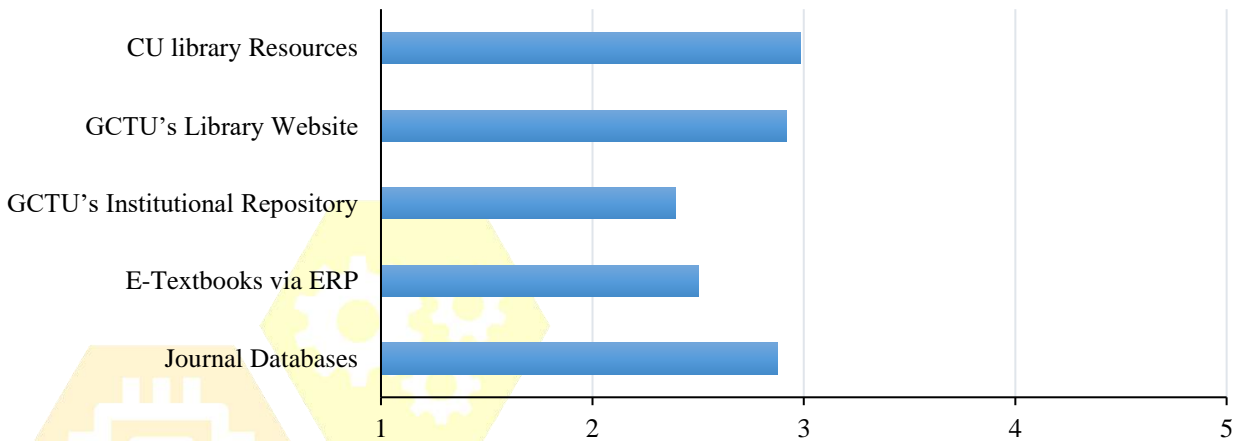

Fig. 2. Students' perceptions of the beneficial effects of e-resources

The results in Figure 2 show all the mean values at either 3 or below, an indication that the students hold the perceptions that they were not deriving significant benefits from the e-resources made available to them through the various platforms. This finding runs counter to expectations, given that the reasons academic libraries procure electronic resources are because of their ease of accessibility, use, readability, affordability etc. ((Thanuskodi, 2012). Hence, for a significant number of a cohort of postgraduate students to indicate that most of the e-resources they access and use are not quite beneficial to them, gives cause for concern.

The findings are however consistent with all the other findings thus far reported in this study, in the sense that, if majority of the students (78%) indicated that they either never, rarely or occasionally accessed the e-resources made available to them, and for those who do, most do not perceive the platforms as being very usable, then most of them will naturally express some level of disquiet regarding the beneficial effects of these resources.

It is worth noting that all the studies on students' access and use of library e-resources thus far sighted, have stopped short of seeking to determine the students' perceived beneficial effects of these resources, though they generally address the issue of user satisfaction (e.g. Tiemo & Ateboh, 2016), or relevance (e.g., Chandran, 2013). The reason for this is most likely due to the presumption that students should naturally be appreciative of the fact that they have easy access to scholarly material which will help them in their academic work. Thus, by expressing some level of satisfaction with a library's e-resources, students are equally implying that they are benefiting appreciably from those resources. This study has however established that merely making e-resources available to students might not be enough to meet their academic needs if issues of awareness, accessibility and usability of the various platforms hosting these e-resources are not taken into consideration.

Objective 5: Challenges that students reportedly encounter in their online academic information seeking activities.

Studies on academic library users' access and utilisation of e-resources through various online platforms and portals, particularly within the Sub-Saharan African context, have placed considerable emphasis on challenges the users typically encounter in their search for digital scholarly material. The common challenges generally reported include; inadequate access to computers, poor Internet connectivity, poor user online search skills, lack of readily available information on

how to use the resources etc. (Ankrah & Atuase, 2018, Yebowaah & Plockey, 2017, Dukper et al, 2018).

In furtherance of this, the concluding part of this study also sought to establish the specific challenges, apart from usability of the digital platforms, that the students will say they typically encounter in their online academic information seeking activities. To achieve this objective, the last question in the questionnaire listed factors frequently reported in the literature as representing challenges or obstacles to users' ability to search, access and retrieve relevant electronic scholarly material through online library platforms. Respondents were required to select one of the listed factors that they felt was the most important singular factor that they considered to be an obstacle to their ability to efficiently search and retrieve relevant information from available e-resource platforms. Table 4 below shows the factors and the corresponding percentages of respondents that selected each factor.

Table 4: Students' reported challenges associated with e-resources access (N=143)

Statement	Frequency	Percentage
Inadequate computer terminals in the library	7	5%
Unavailable or poor (slow) Internet connectivity	69	48%
Inadequate ICT knowledge or online search skills	12	8%
Inadequate support provided by library staff	11	8%
Other infrastructure challenges (e.g. power outages etc.)	44	31%

Table 4 reveals findings that are consistent with what most researchers, particularly within the Sub-Saharan African continent, generally report. Dominating all these challenges, unsurprisingly, is the issue of the Internet - either its unavailability all the time, or in the cases where it is available, the data transfer speeds are so low that it takes a considerable amount of time to access relevant information. This is evidenced by the fact that whilst countries such as Singapore and South Korea were recording maximum mobile Internet download speeds of over 170Mbps (megabits per second) as of March 2021, Nigeria was doing about 20Mbps, with Ghana standing at a paltry 11Mbps (speedtest.net, 2021). Given that most of the online platforms and databases containing the academic

resources are developed, tested, and implemented in the more technologically advanced countries where the question of Internet speed does not arise, it is understandable why accessing these resources from countries with very low Internet speeds can be quite frustrating. Interestingly, a study by Chandran (2013) on user perceptions of electronic information resources in India, a country with a maximum mobile Internet download speed of 56Mbps as of March 2021 (speedtest.net, 2021), provided findings that did not mention Internet availability or speed as a challenge to user access of electronic resources.

For this study, majority of the respondents (48%) identified unavailable or slow Internet (out of the 5 listed factors) as the most important factor that serves as an obstacle to their ability to efficiently access and use e-library resources, notwithstanding the fact that they generally perceive themselves as having adequate ICT and online searching skills. As mentioned earlier, this finding corroborates that of other researchers who conducted similar studies within similar contexts. For example, a study by Dukper et al (2018) on the same subject in another Ghanaian university also had majority of the respondents identifying poor/slow Internet, out of five listed factors, as the most significant challenge to electronic information access. Yebowaah & Plockey (2017) on their part also reported a significant number of respondents (over 45%) identifying low Internet bandwidth/speed as a significant factor impeding their access and use of library electronic resources.

It is also worth noting that the issue of slow Internet has far reaching consequences as it not only takes longer periods for contents on websites to download and display on the screen, but can also result in losses of some data en route, and so if even the pages eventually load, there is a likelihood that they will not respond as expected to mouse clicks etc. This will have a profound effect on usability of the systems, and might be the reason why the participants of this study hold the perceptions of low usability of the e-resource platforms.

Still on the issue of challenges, it is noted that a significant percentage of study respondents (31%) selected the infrastructure challenges option as representing an obstacle to their ability to access and use electronic information online effectively and efficiently. Infrastructure, within the context of this study was operationalized as the availability of reliable electricity to power the devices required to access electronic resources. This factor was included because the study was conducted at a time when several African countries

including Ghana, were experiencing electric power shortages. Indeed, a 2019 World Bank study reports that "power outages have become a characteristic feature of most economies in Africa. Households and firms endure several hours of the day and night without access to power. Even in instances when power is available, brownouts are prevalent, thereby limiting end users' potential utilization of electricity." (Blimpo & Cosgrove-Davies, 2019, p.18).

The (un)availability of electric power is therefore a significant issue when challenges underpinning access to electronic information are being considered. Thus, Ojobo et al (2020) in their study that investigated the availability and utilization of digital reference resources by postgraduate students in university libraries in Benue State, Nigeria, reported that majority of study participants agreed that inadequate/irregular power supply is a significant challenge that hinders the utilization of digital library resources in the university libraries. Likewise, Ankrah & Atuase (2018) also mention power outages as a constraining factor in electronic information seeking and access.

V. CONCLUSION

In the present era of "technological determinism" where digital technologies are driving and transforming social change, and almost every aspect of society is being digitized, it is only natural that libraries, particularly those in higher education and research-oriented institutions, are seen to be harnessing the powers of digital technologies to better meet the needs of their clientele. Consequently, such libraries all over the world have invested significant amounts of money in procuring, and subscribing to, relevant scholarly material in all disciplines and making these accessible in digital format to their patrons, the general understanding being that digital or e-resources are easy to access, readily available, timely, and also eliminates barriers related to space and time (Erich, 2013). Thus, rather than walking into built environments to access knowledge in printed formats, library users now access the resources in digital format, and mostly through devices connected to the Internet. Suffice to add that such users can only make optimal use of these digital resources if they have access to the requisite devices, good Internet connectivity, and the knowledge and skills needed to be able to search, access and retrieve the material that are most relevant to their needs.

In this regard, libraries should not only focus on making digital scholarly material available, but must make the extra effort to carry out the needed research to establish

whether or not, their patrons are deriving maximum benefits from these e-resources. Such knowledge will help inform the strategies that libraries can further adopt to ensure that users continuously benefit optimally from their services. This is particularly imperative in the developing countries where digital technology resource availability and accessibility are quite low compared to what pertains in the advanced economies.

It is within this context that this study examined the library electronic information seeking practices and behaviours of a group of postgraduate students, with the view to unravelling the various factors that influence such practices, and also the perceptions that the students hold with regard to the electronic academic resource paradigm within the developing world context.

The findings of the study have however been quite mixed, with some issues corroborating, and others contradicting what similar research works have reported in the literature. On the whole however, it is established that, as of the time of the study, majority of the students were aware of the existence of the various web-based databases and platforms that the institution's library has made available for them to use to access academic information in electronic formats. This notwithstanding, the students harboured some ill feelings towards these resources, particularly with regard to the usability of the systems and also the extent to which the e-resources were benefiting them in terms of their academic work.

Contributing significantly to these ill-feelings was the issue of poor perceived usability of the online platforms, poor or slow Internet and other related infrastructural challenges, notably power outages. Consequently, majority of the students, though indicated that they possessed the needed skills to access the library's e-resources, hardly logged onto the platforms on a regular basis to do so. In short, the postgraduate students in the institution were not actively engaging in seeking and accessing academic information through the library's e-resource platforms.

The outcome of this study, and most others that produce similar outcomes, should be of great concern, not only to the institution in question, but to all other institutions within similar contexts of technology infrastructural challenges. Whilst the libraries within these institutions strive to make relevant academic information available and accessible to their patrons electronically, the institutions should not lose sight of the fact that these library patrons (especially students) are possibly not benefiting optimally from their investments, due mostly

to system design issues, low Internet speeds and erratic electric power supply. Though addressing these issues might be beyond the capacities of academic institutions, it is still worth exploring how best other systems can be put in place to give the library users not only pleasant user experiences, but also resources that contribute significantly to the pursuit of their goals.

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