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User Awareness and Usability of Research Support Platforms amongst undergraduates at
Kumasi Technical University (KsTU) in Ghana

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Abstract

The study examined the awareness and usability of online library research support platforms among undergraduate students at Kumasi Technical University in Ghana. 126 respondents were sampled and respectively drawn from all the seven faculties that consist of the student population. A descriptive survey method was employed to obtain data from the various faculties using a questionnaire. Analysis of data gathered was carried out using Statistical Product and Service Solution (SPSS), version 20 and excel 2016 for descriptive statistics using percentages. The results revealed that the majority of the students were not aware of the online library research support platforms available at the university library. They could not state the online library research support platforms they recently used at the university library or outside the university library. Also, the frequency at which they used the research platforms were not inspiring. It was further established that the research platforms were not easy to be used by undergraduate students. However, some of the respondents were satisfied with the research platforms and found them to be user-friendly. The study recommends that University Library should consider new ways of creating awareness to attract the new generation of students into the university library. For instance, introduce multimedia technologies that shall allow students to interact, create many open spaces with internet cables where other technological equipment and devices can be connected.

Keywords: Online Library Research Support Platforms, Information and Communication Technologies, Undergraduate students, Academic support, Kumasi Technical University, Ghana

Introduction

Online library research support platforms in recent times have gained massive acceptance in higher institutional settings across the globe as the preferred format for academic research support. Academic institutions such as the Kumasi Technical University (KsTU) in Ghana appreciate the relevance of online library research support platforms and their responsiveness towards the role of academic research support. Given that online library research support platforms tend to be somewhat more accessible than print materials, it offers access to information resources irrespective of shortage of space in the required budget. Online library research support platforms offer researchers, students, and lecturers' advantages to view the contents of their required thesis, journal articles, online public access catalogues in novel ways. It could be more interactive, attractive, and engaging. Presently, KsTU university library subscribes to several e-resources, e-books with the aid of Pro-Quest, and other institutional repositories through the Consortium of academic and research libraries in Ghana (CARLIGH). The essence is to make research support easily accessible to students, lecturers, and researchers. However, provision is only part of the equation; users must be aware, and it must be usable by staff and students.

In contemporary times, online library research support platforms are now available and extensively used in various higher academic institutions. The essence of online library research support platforms was due to easy and concurrent use in advancing convenience. Many universities today have spent so much money on the acquisition of ICT resources to enable online library research support platforms. A good example is Kumasi Technical University (KsTU), Ghana. The rationale for acquiring and enabling these resources at the mentioned institution was to meet the diverse research and information needs of students, faculty members, and the university community. It is only economically viable that these resources are effectively utilized to promote attentively and up-to-date academic and research platforms to enable the university to achieve its vision (i.e. to be a world-class university). Accordingly, Agyekum and Ossom (2015) have challenged the worth of the use of these research platforms as a justification for its investment. Research has shown that its usage has not been up to expectation. Apart from this, evidence on empirical studies has also revealed that students' awareness and usability of online library research support platforms are copiously studied, but little has been done on students' extent of use at Kumasi Technical

University in Ghana. Given the above, the researcher applied TAM to investigate the use of online library research support platforms among undergraduate students at KsTU in Ghana.

General overview of Kumasi Technical University (KsTU)

Kumasi Technical University (KsTU) is situated in the Ashanti Region of Ghana. The institution was founded in 1954 as Kumasi Technical Institute (KTI), Ghana. The essence was to offer craft courses. It was later converted to a non-tertiary Polytechnic by the Ghana Education Service in 1963, set to offer sub-professional courses and technical diplomas. The provision of this institution was based on the recommendation made by PNDC L.321 (VCs Report, 2018) on professional and technical courses. KsTU is one of the first batches of polytechnics that met the conditions/attainment of Technical University status, out of the ten polytechnics in Ghana. The institutions were elevated to technical universities by an act of parliament of Ghana (Technical University Act 922, 2016).

According to the Vice Chancellor's Report (2018), KsTU is made up of twelve strata, consisting of seven Faculties, four institutes, and a center for Renewable Energy and Energy Efficiency. The report further emphasizes that the University comprises three streams of academic sessions: regular, part-time/evening, and distance education with a total student population of 9413. The university runs programs leading to the award of non-tertiary certification, Higher National Diplomas (HND), Bachelor of Technology (BTech), and master's degrees. However, the master's degrees have only been in session for the past two years waiting to graduate its first batch of students.

KsTU holds four major library departments. These are the Reference Library, Lending Library, Bachelor of Technology Library, and the AdakoJachie Library. The library's pool of materials is based on two main formats: printed materials shelved according to the Library of Congress Classification scheme and the Information Technology (IT) research support unit. The IT research support unit holds subscribed electronic databases with volumes of electronic journals, thesis, electronic books, among others for learning and research support services.

Statement of the problem

The awareness and usability of online research support platforms are vital to promoting up-to-date academic research support to enable the universities to achieve their mandate. These resources are

available on online platforms, the use of the internet, web technologies among others. Despite these recent developments, Agyekum and Ossom (2015) argue that students still appear to be struggling with the use of the online library research support platforms to concretely address and respond efficiently to their research needs. Ives and Rowley (2005) and Healey (2011) opined that if this gap is not bridged, it may obstruct efficiency and cause poor instructor supervision and direction, inadequate departmental support among learning peers, and limited access to information resources. Thus, it will end in attrition, loss of confidence, and reputation of the institution. Besides, management's effort of investing in these online library research support platforms would end up being a waste of financial resources. Also, research has revealed that TAM has been applied to many students such as determining awareness and use of online resources but not in the use of online library research support platforms among undergraduate students at KsTU in Ghana. This study seeks to discover the knowledge of awareness and usability of online library research support platforms among the students.

Research Objectives

1. To determine students' awareness of online library research platforms available to students
2. To determine students' usability of online library research support platforms available at KsTU

Review of literature

Awareness of online library research support platforms

The potential of technology in changing the face of library resources by making them more attractive and accessible for teaching, learning, and research purposes can be traced from the early development of computer technology (Hawthorne, 2008). Libraries were part of the early adopters of technology. Technology brought joy to the face of libraries when the use of electronic resources began as far back as the mid-1960s, 30 years before the introduction of the World Wide Web. Technology began with the development of machine-readable catalog (MARC), the era in which bibliographic databases came into session.

The availability of bibliographic databases can be drawn from the time in which (microcomputer revolution of the 1980s) libraries software, diskettes, and databases were acquired on CD-ROMs.

The pre-World Wide Web Internet paved the way for online catalogs to become widely available. Search interfaces also became friendlier.

Hawthorne (2008) stated that access to online library research platforms became more attractive and accessible due to the later development of graphical interfaces like google. The beginning of this development can be dated back to the mid-1990s. With the aid of Web-based catalogs, bibliographic, full-text databases, and sooner or later electronic books were offered by libraries. There was no need for regulars to visit the library before significant research could be engaged. Hawthorne further establish that awareness of online library research support platforms came to light in the mid-1960s, this brought a great change in how patrons accessed library resources.

Studies undertaken to investigate the awareness and usage of the available online library research support platforms especially in underdeveloped nations have not been up to expectation despite its relevance. For example, Borgman (2006) indicated that there is relative literature on the usability of available research platforms, particularly in determining how and whether these technologies promote easy communication and allow access to new forms of information. Likewise, Meyer and Dutton (2009) emphasize that there is relatively little knowledge and awareness of the use of online library research support platforms. Again, Adeagbo et al. (2016) also recorded a similar low awareness and usage of online library research support platforms. Adeniran (2013) disclosed that users of the library were aware of access to online library research support platforms in the university library, but the usage rate was low. Ankamah, Akussah, and Adams (2018) revealed that this problem is more peculiar to developing countries.

In Ghana, comparative studies on the Awareness and Usage of online library research support platforms by Geography and Resource Development Graduate Students at the University of Ghana proved that students were aware and that utilization was generally high (Kwadzo, 2015). This suggests that, despite the number of studies carried on awareness and usage of online library research support platforms, available studies reported contradictory findings, hence, the need for empirical evidence to be drawn from the situation at KsTU.

Usability of online library research support platforms

- *The flexibility of online library research support platforms*

The elongated anticipated argument by universities and colleges using online to run academic programs has come under intense scrutiny by many scholars in contemporary times (Daugherty & Funke 1998). In view of some researchers, students found online available platforms in higher institutions as more expedient than the use of print materials as it brings about flexibility and gives room for some level of self-paced study. It was also emanated from some students that online library research support platforms exposed them to a wide range of information that is not available in textbooks. Kristanto (2017) emphasized the effectiveness of online library research platforms compared to traditional textbooks. Kristanto further highlighted that online library research support platforms offered a competitive advantage as it fits their schedules, save time and encourage students to study longer than they would if they were only using a textbook.

- *Quality of Resources*

In recent times the challenge of developing more qualified and talented trained personnel to undertake responsibilities of fusing online activities into university curricula for purposes of learning and research support is becoming more extensive. According to Koehler, Mishra, Hershey and Peruski (2004), Universities across the world are committing a greater part of their resources to ensure they satisfy the requirements of acquiring more qualified and talented individuals to occupy their technological innovations. The main aim is to produce knowledge, skills, and technical know-how throughout the institution (Ehlers, 2004). This indicates that the product of an educational process is not simply the result of an educational institution's development process. However, quality often has to do with encouraging and allowing students to undertake learning and research activities at their own pace.

- *Features of Information Technology*

According to Webster and Hackley (1997), the quality of technology highly depends on the appreciation of available IT infrastructure. Sun, Tsai, Finger, Chen and Yeh (2008) Brophy and Bawden (2005) opine that user-friendly application software tools such as the use of meaningful keywords and simple ideas strongly depend on the ability of the user to put in little effort. Piccoli, Ahmad and Ives (2001) also suggest that the higher the reliability and quality of IT, the higher the effect of access to online library research support platforms on the part of the user.

Additionally, Piccoli, Ahmad and Ives (2001) describe IT and internet quality as very important elements in using online library research support platforms. These elements are vital because most educational and research materials are now available on online library research support platforms. Therefore, high-speed network transmission and reliable technology have a greater impact on the use of online library research support platforms (Sun, Tsai, Finger, Gutierrez, 2015 Chen & Yeh 2008). According to Al-Fraihat, Joy and Sinclair (2020) system quality, support system quality, learner quality, and perceived usefulness determine students' confidence and behavior towards electronic learning and research platforms.

Students' use of online library research support platforms

Schmidt and Werner (2007) posit that students use of online library research support platforms can be successful by taking into consideration the following factors:

- Awareness: The student must be able to determine expectations, the extent of time necessary to accomplish a task, and appreciate computing and research skills.
- Orientation: As opposed to conventional platforms, the use of online library research support platforms goes through multiple phases of planning before the content is involved. For example, various stages of training, its benefits, a student should be able to log and log out procedures, among others. This suggests that students should be well oriented to aid their maximum use.
- Discipline and motivation: To work efficiently on the platform, the student should be disciplined and driven to obey instructions, schedules and apply the necessary skills.
- Organized: To ensure that expectations are met, students must be coordinated enough to arrange their time for study.
- Self-directed: This is to ensure that students are self-motivated and provided with assistance when necessary.

Methodology

This study employed a quantitative approach; thus, the investigator discussed issues related to the study's response rate and representativeness because the results of the study were generalized. The

overall population of the study was 373 students randomly sampled from all the seven faculties of the University. 26 from the Applied Science, 24 from Built & Natural environment, 181 from Business and Management Studies, 25 from Creative Arts & Technology, 66 from Engineering, 6 Institute of Entrepreneurship & Enterprise Development, and 45 from Health Sciences. Given the four interrelated research designs, the sample size has a greater influence to detect significant relationships, discrepancies, or interactions (Bartlett, Kotrlik, and Higgins 2001). It is also vital to assume that bias is essential especially when determining sample size and dealing with non-response (Ngulube 2000). Some works of literature support the view that studies especially online or web questionnaires appear to have reported low response rates of below 50%. For instance, Doerfling, Kopec, Liang, and Esdaile (2010) reported a response rate of 25.6%. Alternatively, Ngulube (2005) argues that resources could be wasted when samples are too large; however, the utility of the results also diminishes when samples are also too small. In consideration of the emergence of COVID-19 and upon further constraints faced by the investigator in gathering data for the study, the rate of responses acquired was somewhat low. The study employed questionnaires as a data collection tool. The investigator sent out 372 questionnaires and 126 responded representing 34%. Hence, the analyses for the study were based on the number of responses acquired.

Data Analysis and Discussion

Gender Distribution of the Respondents

The table below (Table 1) also presents the gender distribution of the respondents. This aims to determine the percentage of male versus female respondents on those who responded to the questions. The proportion of males to the females who participated in the study was 68% and 32% respectively. This shows that the sample had more male than female categories. This could also perhaps be due to the high number of males to females ratio pursuing higher learning. Moreover, in KsTU, males have always dominated the female category due to its historical inception that the institution began as a technical institution (VC's report 2018).

Table 1: Gender summary of respondents (N=126)

Respondents	Students	
Gender	Frequency	Percentages (%)

Male	86	68
Female	40	32
Total	126	100

Age Categories of Respondents

This was aimed at determining the percentage of the age group of respondents who responded to the study. The findings revealed that 80(63%) of the respondents were between the ages of 20 to 29 years old, and 46(37%) were between 30 to 39 years old. This implies that the majority of the respondents belong to the young generation. This young generation of students are conversant with technological devices and are sometimes referred to as tech-savvy. The summary of the data is presented in Table 2.

Table 2. Age category of respondents (N=126)

Age group	Frequency	Percentage (%)
20 – 29	80	63
30 – 39	46	37
Total	126	100

Distribution of Students by Faculties/Schools

The study aims to determine which faculty participated well in the study. In this respect, the respondents were asked to indicate the specific faculty they belong to. About 44(34.9%) of the respondents were from the faculty of Business and Management Studies, 25(19.8%) were located from Applied Sciences, 21(16.7%) from Engineering, 18(14.3%) from Health Science, 10(7.9%) from Built and Natural Environment, 4(3.2%) from Creative Arts and Technology whereas 2(1.6%) were from the Entrepreneurship and Enterprise Development. It was observed that the largest proportion of the respondents was from the faculty of Business and Management Studies. This could be because that faculty make up the highest population of students in the university. Hence, their participation was greatly felt in the study. A summary of the findings is presented in Table 3.

Table 3. Faculty/schools of the Respondents (N=126)

Faculty	Frequency	Percentage (%)
Applied Science	25	19.8
Built & Natural Environment	10	7.9
Business and Management Studies	44	34.9
Engineering	21	16.7
Entrepreneurship & Enterprise Development	2	1.6
Creative Arts & Technology	4	3.2
Health Science	18	14.3
Total	126	100

Students' awareness of online library research support platforms

The respondents were asked to indicate if they are aware of the online library research support platforms available at the university library. This objective aimed at determining student awareness of online library research support platforms available, how often they used them, and if there are any other research platforms outside the library that they may have used.

Students' awareness of online library research platforms available at the university library

The outcome indicated in Figure 3. shows that 70(56%) of the respondents were not aware of the online library research support platforms available at the university library. 56(44%) of the respondents indicated they were aware.

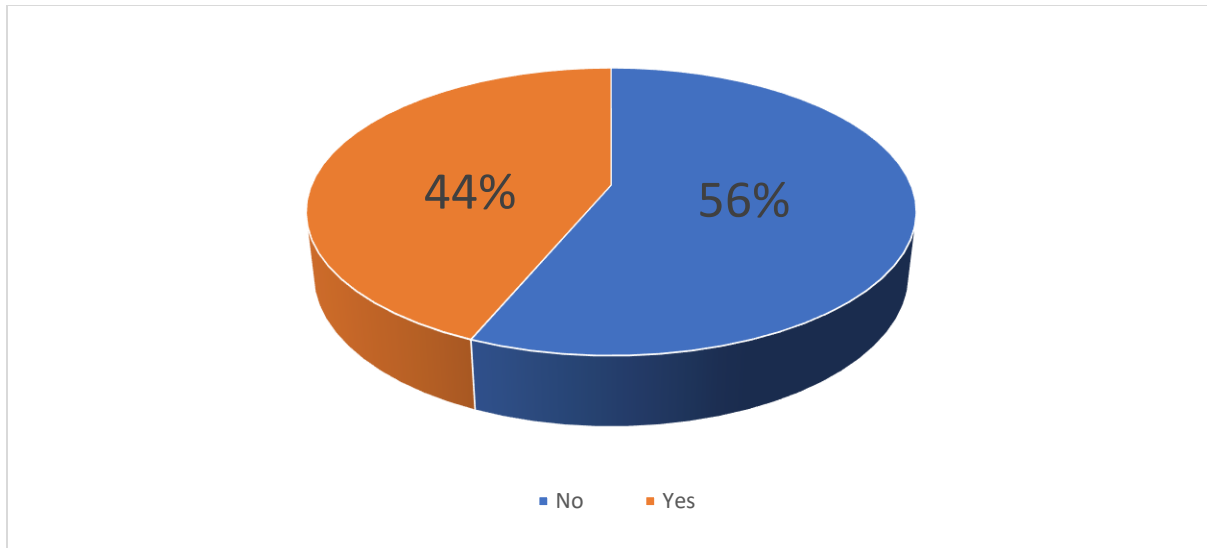


Figure 1: Students' awareness of online research platform (N=126)

Online library research support platforms recently used by the students

As a follow-up question respondents were asked to indicate which online library research support platforms they recently used. 91% of the respondents refused to answer this question, whereas 9% gave the following results:

- google chrome
- google scholar
- Taylor and Francis
- emerald insight
- research gates
- e-resources
- yahoo
- SkyDrive
- ask.com
- Zotero
- pdf drive

The frequency of usage of the online library research support platforms

The respondents were further asked to indicate the frequency in which they used these online library research support platforms. 66(52.4%) of the respondents did not respond, 25(19.84%) mentioned they used them on a weekly interval, 19(15.07%) indicated they used them daily. 16(12.69%) responded they used them occasionally.

Table 4. Frequency of usage of online library research support platforms (N=126)

	Frequency	Percentages (%)
Weekly	25	19.84
Daily	19	15.07
Once a while	16	12.69
No response	66	52.4
Total	126	100

Students' awareness of other research platforms not available at the university library

The respondents were also questioned whether they were aware of other research platforms that are not available at the university library. 116(92%) of the respondents indicated no, they are not aware of any other research platforms outside the university library. 10(7.9%) indicated yes, they are aware of other research platforms outside the university library. When they were further asked to state or specify other research platforms, they have used outside the university library, only 3(2.4%) gave specific answers to this question. These responses were as follows: yahoo, Zotero, pdf drive. A summary of the findings is indicated in Figure 2.

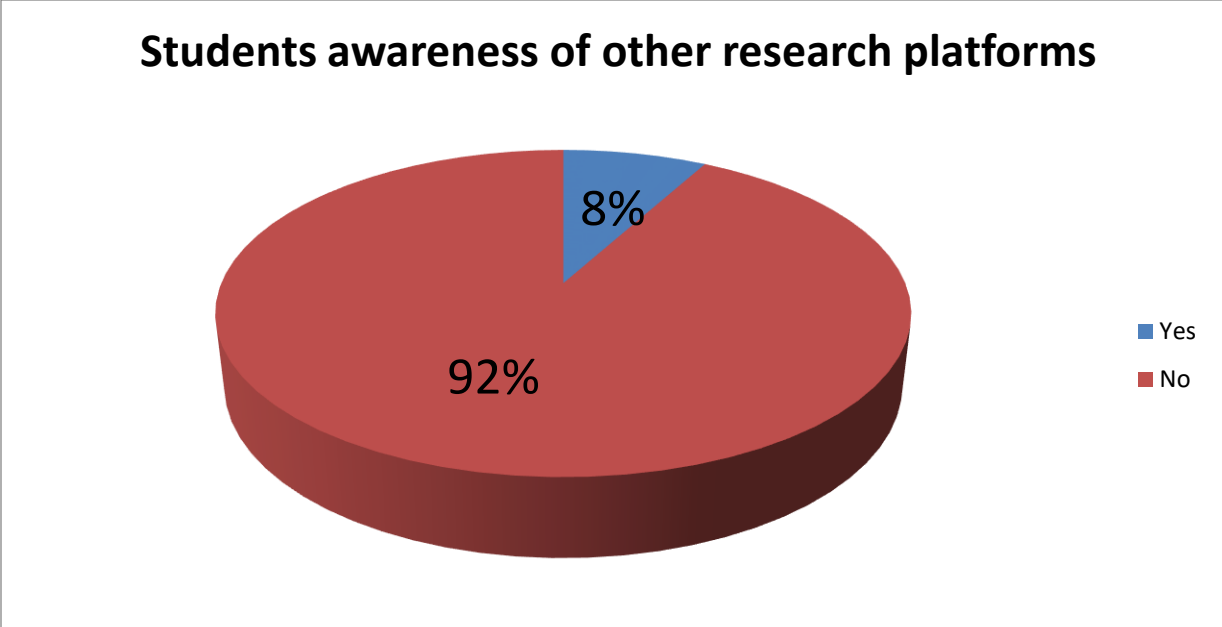


Figure 2: Awareness of other online library research platforms out the university library (N=126)

Usability of online library research support platforms available

The objective aimed to gather information on the usability of the online library research support platforms among the students. Mostly, online library research support platforms are characterized by usability as an option to simplify their usage. In this regard, respondents were asked to explain the ease of use, level of flexibility, level of satisfaction, user-friendliness, and students’ use of the research platforms.

Student’s ease of use of the online library research support platforms available

This was intended to determine the ease of use of the research support platforms available. The respondents were asked to rate their level of agreement on the ease of use of the research platforms. 53(42.1%) were undecided or neutral, 29(23.0%) agree that available research platforms are easy to use, 23(18.3%) disagree with the statement, 12(9.5%) strongly agree, and 9(7.1%) strongly disagree. The summary of findings is presented in Figure 5.

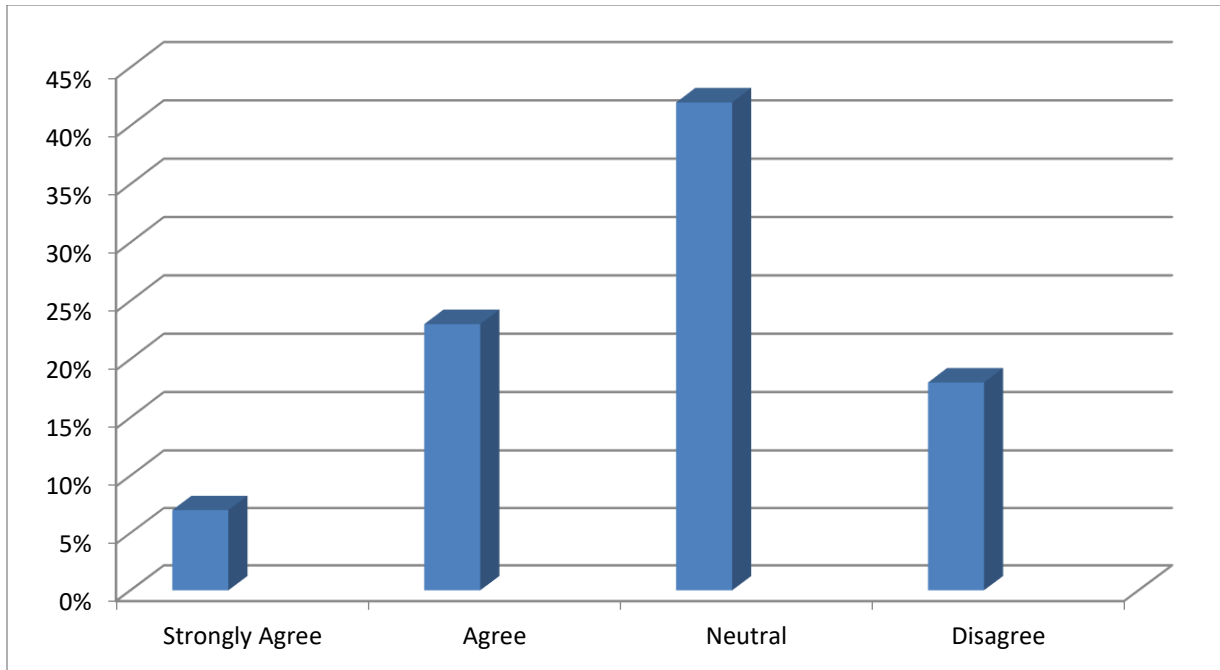


Figure 3: Ease of use of the online library research support platforms (N=126)

The flexibility of the online library research support platforms

The study was aimed at acquiring information on the level of flexibility among undergraduates on the use of the research platform. The respondents were asked to rate the level of flexibility on a scale of 1 to 4, wherein 1 represents Very flexible and 4 represents Not flexible. 44(35%) of the respondents rated the systems as little flexible, 39(31%) rated them as somewhat flexible, 32(25%) rated them as very flexible and 11(9%) rated them as not flexible. The summary of findings is presented in Figure 4.

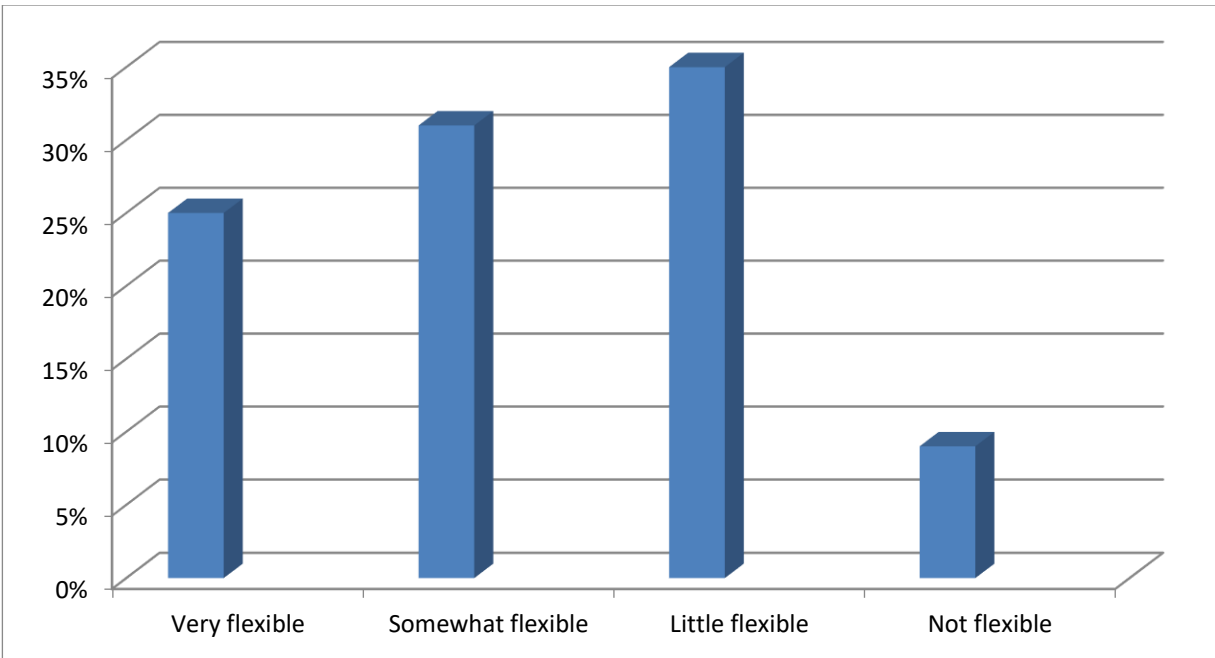


Figure 4: Level of flexibility on the research platforms (N=126)

Student's level of satisfaction on the online library research support platforms

The study aimed at ascertaining the level of satisfaction of the use of the research platform among undergraduates of KsTU. In this regard, the respondents were asked to rate their level of satisfaction on a scale of Very satisfactory to Not satisfactory. 49(38.9%) of the respondents rate the online research platform as somewhat satisfactory, 38(30.16%) indicated very satisfactorily, 22(17.46%) rated it as little satisfaction and 17(13.49%) indicated not satisfactory. The summary of findings is listed in Figure 5.

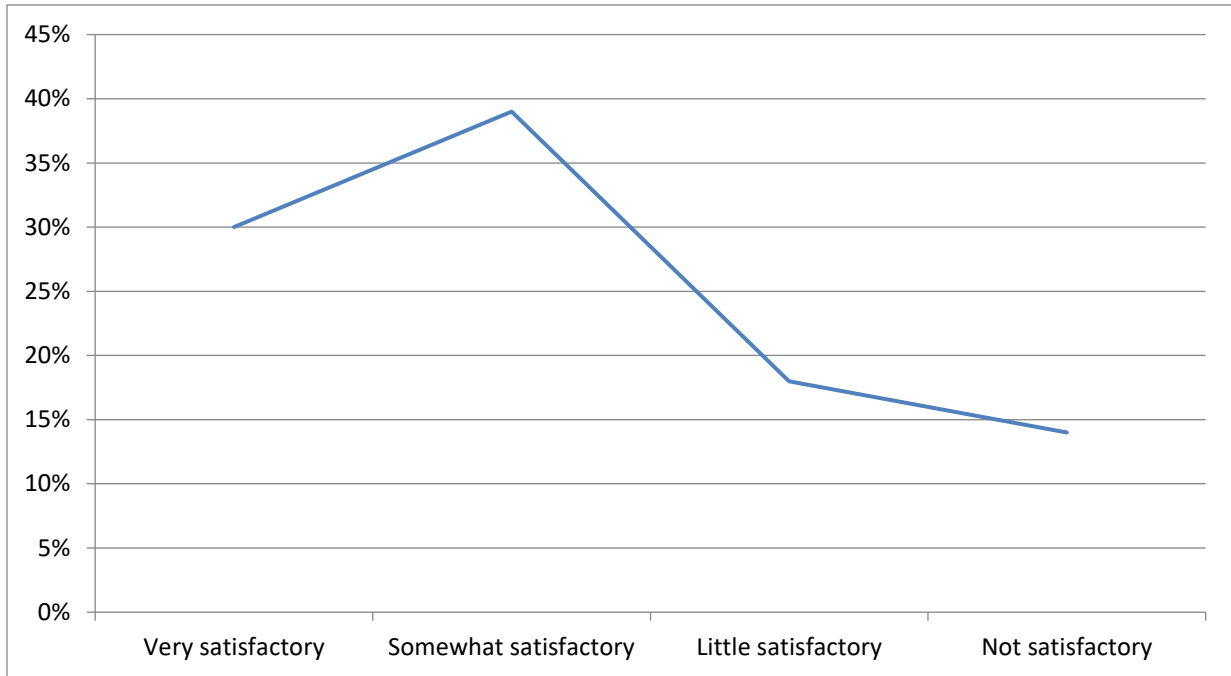


Figure 5: Level of satisfaction on the research platform (N=126)

Student's level of user-friendliness of the online library research support platforms

The study aimed at determining how user-friendly the online research platforms were to students. The respondents were again asked to rate how user-friendliness the research platform was. From a scale ranging from user-friendly to not friendly. 51(40%) of the respondents rated the research platform as very friendly, 43(34%) rated it as somewhat friendly, 23(18%) rated it as little friendly, and 9(7%) rated it as not friendly. A summary of the findings is presented in Figure 6.

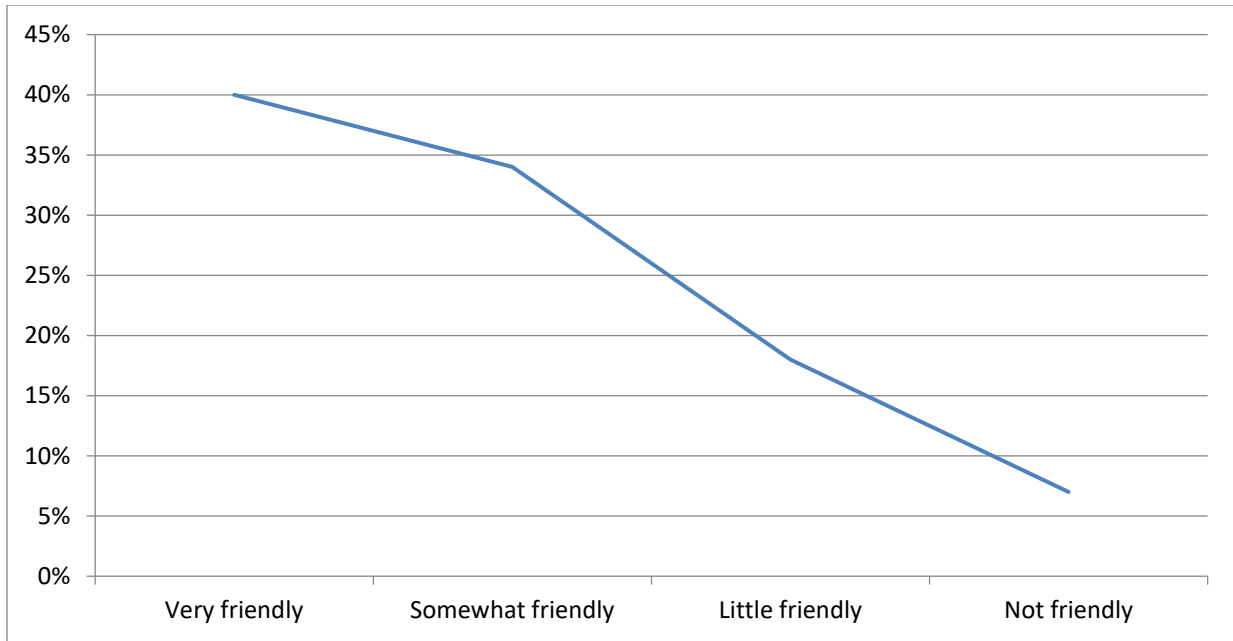


Figure 6: Level of user-friendliness of the research platform (N=126)

Student's use of the online library research support platforms

The study aimed at gathering information on students' use of the research platform. The respondents were asked to rate their position on the following continuum of four options, wherein 1 represented "To a great extent" and 4 indicated "Not at all". 57(45.2%) of the respondents agree to somewhat extent that they can organize their online time on the research platform. 43(34.1%) agreed to a great extent, 19(15.1%) agreed to a very little extent and 7(5.6%) did not agree at all. 67(53.2%) of the respondents agreed to a great extent that they can independently use online research platforms, 34(26.9%) agreed to a very little extent, 19(15.1%) agreed to a somewhat extent, and (4.8%) did not agree at all. Also, about 53(42.1%) of the respondents agreed to a very little extent that can easily use all online research platforms, 41(32.5%) agreed to a great extent, 26(20.6%) agreed to somewhat extent and 6(4.8%) did not agree at all. Another 59(46.8%) of the respondents agreed to a very little extent that they prefer using online materials to print, 44(34.9%) agreed to a great extent, 13(10.3%) agreed to somewhat extent and 10(7.9%) did not agree at all. A summary of the findings is presented in Table 5.

Table 5. Students position on the research platform (N=126)

Statement	To a great extent	Somewhat extent	Very little extent	Not at all
I can organize my online time	43(34.1%)	57(45.2%)	19(15.1%)	7(5.6%)
I can independently use online research platforms	67(53.2%)	19(15.1%)	34(26.9%)	(4.8%)
I can easily use all online research platforms	41(32.5%)	26(20.6%)	53(42.1%)	6(4.8%)
I prefer online platforms to print material	44(34.9%)	13(10.3%)	59(46.8%)	10(7.9%)

Discussions

Students' awareness of the available online library research support platforms

The results showed that the undergraduate students recorded low awareness responses; hence, usage rates were low as well. This is evident by the results that only 56 out of 126 stated they are aware of online library research support platforms available at the university library. Even though not the only enabler of its usage, it was noted from the literature that awareness is one of the contributing factors to the use of online library research support platforms among students. This study is consistent with the previous study by Adeagbo et al. (2016) that low awareness contributed to little use of online library research platforms among students. Perhaps, it can be inferred that the university libraries were not advancing new ways that could attract or create awareness among the new generation of students as opposed to the traditional library research support platforms.

The results gathered on the online library research support platforms recently used by students also showed a low response. This confirms the initial results that low awareness definitely leads to a low usage rate. It is evident from the results that the majority of the participants skipped this question. For instance, 91% skipped this query and 9% answered. Evidence gathered was in support of the initial study by Kwadzo (2015) that comparative study on Geography and Resource Development Graduate students awareness and use of electronic resource support platforms at the University of Ghana proved that students were aware and that utilization was generally high. It is worrying that despite the availability of online library research support platforms deployed at the university library, the students could not state a single one of them they recently used. This suggests that online library research support platforms available at the university library have not been adequately publicized, hence, its usage was low.

In accordance, the results further showed that the frequency with which students use the online library research support platforms was not encouraging. For example, 52% did not respond, 19% mentioned they use the research platforms at weekly intervals, 15% stated on a daily interval, and 13% mentioned they used them once in a while. Evidence gathered was also in support of the initial confirmation of students' awareness as a determinant of their usage. It may suggest that this situation explained why Ankamah, Akussah and Adams (2018) stated that this problem is more peculiar to developing countries. A possible explanation could be that the general use of recent technological devices like smartphones compels students to use available online platforms but not for research support purposes.

Alternatively, the results showed students' awareness of other research platforms not available at the university library was also not inspiring. 92% indicated they are not aware and therefore did not respond or mention any other research support platforms they might have used outside the university library. 8% indicated they are aware. However, only 2% out of the 8% gave the following responses: yahoo, Zotero, pdf drive. It was worrying not that these results cannot also be classified as online library research support platforms. Hence, evidence gathered also confirms the initial assumption that the general use of technological devices like smartphones, tablets, laptops compelled the students to be on online platforms but not for research support purposes. Overall, the study arrived that the students were not aware of the online library research platforms available to them; hence, it was underutilized.

Students' usability of online library research support platforms

It is assumed that systems are characterized by usability as an option to simplify their usage. Ideally, such a system is influenced by the ease of use, level of flexibility, level of satisfaction, user-friendliness, and students' use of the research platforms

Even though the results attained in this study showed that the majority of the students were not certain to easy to use the research platforms available, it was also evident that a substantial number of them also saw it to be easy to use. For example, the results show that 42% were uncertain, 23% mentioned it is easy to use, whereas 18% mentioned it was not easy to use. Evidence gathered elucidated the elongated argument raised by some researchers like Daugherty and Funke (1998)

that universities and colleges using online platforms to run academic programs have come under intense scrutiny. Also, a novel study by Mothobi (2018) argues that even though online platforms are key drivers of social-economic development and growth, only South Africa has more than half of its population online out of the ten African countries surveyed. Ghana, Kenya, Lesotho, Nigeria, and Senegal all have Internet penetration rates higher than 20%. This could probably account for some of the reasons why the students were not certain to be easy to use; therefore, they were not well-equipped to address the queries. This suggests that the university has to invest more in internet penetration to encourage students to easily use the research platforms.

The study also opened that the majority of the students described the research platforms with little flexibility. Even though a considerable number found it to be flexible. For example, 35% reported it as a little flexible, 31% somewhat flexible and 25% mentioned it was very flexible. Evidence gathered to refute the study by Kristanto (2017) that students found online library research platforms in higher institutions as more expedient as it brings flexibility and gives room for some level of self-paced study. It could perhaps be that the students were not used to the online library research support platforms. This suggests that the university library should advance ways to sharpen the information literacy skills among the students.

It was further reported that the majority of the students perceived the online library research support platforms as satisfactory to a certain extent. Also, a substantial number of participants were mentioned to be very satisfactory. For example, 39% reported somewhat satisfactory, 30% mentioned very satisfactorily, 18% reported little satisfaction and 14% were not satisfied. Evidence gathered is consistent with the previous study by Koehler, Mishra, Hershey and Peruski (2004), that universities across the world are committing a greater part of their resources to ensure they satisfy the requirements of acquiring more qualified and talented individuals to occupy their technological innovations. It can be inferred that the research platforms appear to gain some level of satisfaction among the undergraduates; hence, a good number of the students appreciate the research platforms to some extent.

Additionally, the results showed that the majority of the participants described the research platforms as user-friendly. For instance, 40% of the participants reported being very friendly, 34%

mentioned being somewhat friendly and 18% reported little friendly. Evidence acquired is consistent with the previous study by Webster and Hackley (1997) that the quality of technology highly depends on the appreciation of available IT infrastructure. It was also advanced by Piccoli, Ahmad and Ives (2001) that the higher the reliability and quality of IT, the higher the effect of online access on the part of the user. Therefore, it can be concluded that the university library has deployed an appreciable level of IT infrastructure to assist students as online library research support platforms.

The study extra revealed that the students' ability to organize or arrange a time to use the research platforms was gradually encouraging. For instance, 45% of them reported they were able to organize their online time to somewhat extent, 34% mentioned to a great extent, 15% reported to a very little extent and 6% mentioned not at all. It was also evident from the results that the majority of the students were able to independently use the research platforms to a great extent. For instance, 53% reported to a great extent, 27% mentioned to a very little extent, 15% to somewhat extent, and 5% indicated they were not able to organize their online time. The results further exposed that the majority of the students were not certain they can easily use all the research platforms. For instance, 42% reported to a very little extent, 33% mentioned to a great extent 21% to somewhat extent, and 5% were not able to use it at all. Also, the study opened that the majority of the students prefer using online platforms to print to a very little extent. For example, 47% reported to a very little extent and 35% mentioned to a great extent. 10% mentioned to some extent, whereas 8% were not able to use it. It was exciting to note that a substantial number of the students have proven to have some considerable influence on the online library research support platforms. Evidence gathered is consistent with the previous study by Schmidt and Werner (2007) that students' use of online library research support platforms can be successful by considering factors such as awareness, orientation, discipline, motivation, organization, and self-direction. Overall, a possible assumption could be that the majority of the students suffer from these mentioned factors; therefore, the university library should consider the above-mentioned factors to affirm its purpose of deploying the research platforms at the university library.

Conclusions

This research aims to investigate the online library research support platforms available at the university library. To test the situation of the students at KsTU, an empirical study was conducted. The contribution of this study is multifaceted and provides theoretical contributions as follows.

The study concluded that the majority of the students were not aware of the online library research support platforms available at the university library. They could not state the online library research support platforms they recently used at the university library or outside the university library. The frequency at which the students used the research platforms were not inspiring. Hence the study concluded that the research platforms available at the university library were underutilized.

The study further concluded that the research platforms were not easy to be used by the students. The students recognized it as a little flexible. However, some of them were satisfied with the research platforms, hence they found it to be user-friendly. The study concluded that the research platforms were usable to a moderate extent.

Recommendations

Following the outcome of this study, the researcher makes the following recommendations for consideration to improve on the current situation:

- The University Library should consider new ways of creating awareness to attract a new generation of students into the university library. For instance, introduce multimedia technologies that shall allow students to interact, create many open spaces with internet cables where other technological equipment and devices can be connected.
- The University Library should establish a full department for research support, organize training programs for students especially first years and final years as well as the faculty members.
- The University Library should introduce information literacy programs as part of the university curriculum as it is done in other well-established universities in Ghana.

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