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Electronic Resources Sharing in Academic Libraries in Ghana: A comparative study of Ghana Technology University College and Presbyterian University College Libraries.

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ABSTRACT

The purpose of the study was to examine electronic resource sharing among academic libraries focusing on Ghana Technology University College and Presbyterian University College Libraries. Qualitative research was used for the study. A semi-structured interview was used to collect data based on the objectives identified. Twelve (12) participants were interviewed. The findings showed that the majority of the participants indicated inadequate budgetary allocation, the influx of technology and information overload in sharing e-resources influenced both libraries studied, the majority of the participants mentioned inadequate ICT facilities as a challenge in both libraries. Other challenges were on cost in the subscription and maintenance, repair and training of staff. It is therefore recommended that academic libraries in Ghana Management should ensure the provision of adequate funds to enable librarians to procure the necessary ICT facilities and other resources to facilitate e-resource sharing to promote quality user satisfaction.

Key Words

Electronic resources, academic libraries, resources sharing, Ghana Technology University College, Presbyterian University College, Ghana

Introduction

Academic libraries are the backbone of every higher learning institution which provides materials in a different format to support teaching, learning, research and scholarly activities for the university community (Bawack, 2018 and Mia, 2019). Ilo (2008) discussed in a study how academic libraries have become an essential area of universities. Digital technologies have changed libraries' operations and services globally currently (Arif and Mahmood, 2012). Li-Huan (2007) discussed in a study that technology combines human comprehension to meet their needs right from the olden days until today. Academic libraries must, therefore, find means to be abreast with the current transition of the traditional libraries into more digital as they contribute immensely to knowledge development (Uwamwezi, 2017).

Acheampong (2016) and Appleton (2006) in their works observed the tremendous change in outdated dissemination of information resources from print to electronic, services and operations of academic libraries shifted positively in order to share an electronic resource to the university community. Access to electronic resources by Information Communication Technology (ICT) facilities may be convenient as bibliographic guides to possible sources. However, they are often seen as cited references (Graham, 2003; Acheampong, 2016). Dadzie (2005) posits in a study the significant use of electronic resources as irreplaceable research tools that balance print-based resources in any out-of-date library. Dadzie (2005) further identified the significance of using electronic resources based on its convenience, frequently updated, cost-effective and many others. Dadzie (2005) affirms in his study that electronic information supplements to print materials and have even replaced them to support academic work, however, academic libraries must consider resource sharing as a significant tool to support the limitations that individual libraries go through in serving their users to meet their information needs.

According to Anwar and Al-Jasem (2018), “resource sharing has become essential and information provision necessity and has also reached the role of the provision of well-organized and cheap information service from now on”. Nwalo (2008) defines resource sharing “as a

formal arrangement by a group of organizations that have common interests, to pull their materials and human resources to meet clientele needs much more than they could have done if they were to depend on individual efforts.” Ilo (2008) and Anasi and Ali (2012) mentioned in their papers the significant use of electronic resource sharing giving all under privilege libraries the opportunities to get relevant electronic information from their sister libraries through interlibrary loans, shared acquisition, with a central catalogue of library materials and joint storage of materials.

Some researchers argue that various types of sharing have decreased the ability of libraries in meeting the increasing information needs of their clientele from locally held information resources because of the tremendous increase in the creation of information resources, both located in-house and available through remote access (Anwar and Al-Jasem, 2018 and Manjunatha and Shivalingaiah 2011). However, it is sharing of resources that have come to enhance the services and operations of libraries to be able to meet the information needs of their patrons because the needed product of the increased information can be shared among individual libraries and those libraries that are less endowed can benefit from it. Again, through sharing, libraries can get enough space to provide other services that would be beneficial to the library users (Quagraine, 2017).

Statement of the Problem

In this era of digital age and information explosion, most academic libraries are moving from the traditional building to more sophisticated and virtual state with the state of art facilities to be able to meet the changing information needs of their clientele all over the world (Haneefa, 2007 and Tandi, 2014). Academic libraries that play an essential role in assisting users to locate and acquire relevant information to develop knowledge becomes irrelevant without the use of Information Communication and Technology facilities in this era (Al Harrasi and Hassan, 2014). Well, and empowered universities have inculcated ICT facilities, Information Management Systems, creating of institutional repositories to ease in dissemination information to their users and their operations. However, some of these university libraries are finding it difficult to acquire the necessary resources due to budget cuts and other factors that affect academic libraries in meeting the information needs of their users (Quagraine, 2017). Preliminary investigation by the researcher at the Ghana Technology

University College and Presbyterian University College Libraries revealed low patronage of library resources by users. Due to the preliminary investigation, the researcher thought it prudent to conduct empirical research to examine the factors which influenced the libraries to share resources electronically.

Objectives of the study

Specifically, the objectives of the study are:

1. To determine the factors that influenced electronic sharing among the academic libraries
2. To examine the available ICT facilities that can support electronic resource sharing among the academic libraries
3. To establish the challenges that hinder effective electronic resource sharing among libraries

Literature Review

Electronic Resource Sharing in Academic libraries

Electronic Resource sharing is the means of sharing library collections, facilities and human resources among academic and research libraries. Alidousti, Nazari and Ardakan, (2008) defines resource sharing as “any activity shared by two or more libraries to facilitate, improve and develop library operations and to enhance the exploitation of library resources and services by their users” The resources shared can be human resources, information materials, cost and many others. Resource sharing has also been defined by Onwuchekwa, (2015) as “the process by which a group of libraries, information centres, etc decide to make their resources available for the common use and benefit of all members of the group”. The major aim or objective of resource sharing in the library is enabling users to access information materials wherever they find themselves and at any given time.

Electronic Resource Sharing in Ghana

Sharing of resources started in Ghana through interlibrary loan and document delivery as it has been with other university libraries in Africa and the world at large (Alemna, 1997; Dzandza and Alemna, 2011; Tetteh, 2018). Interlibrary loan has its origin way back in 3000 and 3400BC (Ellingson and Morris, 2011). Sharing of union catalogues was the fundamental form of

cooperation among Ghanaian university libraries to increase their resources at the local, regional and national levels through Danish International Development Assistance (DANIDA) and International Federation of Library Association (IFLA) project organized in 1996 and 2002 (DANIDA, 2002 and IFLA, 2002). This gave birth to a consortium called Ghana Interlibrary Lending and Document Delivery Network (GILLDDNET) which was formed as a pilot project to mentor other sub-Saharan African countries (Martey, 2004; Dzandza and Alemna, 2011; Tetteh, 2018).

After several attempts, Academic and Research Libraries in Ghana also came together to form a consortium in 2004 with fifteen members after the DANIDA funding ceased in 2002. CARLIGH is now grown with five areas of concern which include: Bibliographic Services, ICT, Marketing, Electronic Information Services and Training with additional members coming on board (Dzandza and Alemna, 2011).

Factors Influencing Electronic Resource Sharing in Academic Libraries

Budget Cuts

Academic libraries are mandated to provide resources that include human, information material, as well as facilities to support teaching, learning, scholarship and research work (Al Harrasi and Hassan, 2014; Uwamwezi, 2017). However, the libraries are finding it very difficult to seek a solution to the obstacles that hinder users to meet their information needs (Al Harrasi and Hassan, 2014; Goodluck, 2012 and Miguel, 2007). Institutions' academic libraries operate especially private management does not consider them (academic libraries) fully when preparing their strategic plans to provide the necessary infrastructure and resources (Uwamwezi, 2017). Asante, (2010) emphasized the need for university libraries to provide adequate budget by their parent organization to meet their needs.

In Canada, the Canadian National Licensing-Site project (CNLSP) for instance was able to negotiate the price of e-resources and being able to get better rates as well. The consortium of Consortium like Centre for Research Libraries (CRL) INASP, Electronic Information for Libraries (EIL), International Coalition of Libraries Consortia (ICLC), Consortium of Academic

and Research Libraries in Ghana (CARLIGH), etc are known in assisting countries and academic libraries in negotiating for e-resource acquisition (Kimanga, 2018; Reilly, 2013; Tetteh, 2018). According to Kimanga, (2018) “INASP has been working in Kenya since 2002 and through negotiations with publishers internationally and internally, able to secure licenses on behalf of KLISC with national licenses at considerably reduced prices or for free on e-journals and e-books”.

Tetteh, (2018) in his studies discussed similar support gained from international organizations that academic and research libraries in Ghana and developing countries were empowered by International Federation of Library Associations and Institutions (IFLA) in 1996, with support from International Network for the Available of Scientific Publications (INASP) and Electronic Information for Libraries (eLFL) to increase their limited e-resources successfully. Kimanga, (2018) pointed out in a study that many issues have been addressed in terms of economic value, training of staff and acquisition of information resources when libraries operated alone through e-resource sharing hence the formation of consortium among academic libraries in Africa.

Availability of ICT Facilities

In recent times, technology has been the underpinning element of libraries’ development (Miguel, 2007). Several studies have been conducted on well-developed Information Communication Technology (I.C.T) in most academic libraries (Smith et al., 2020). This has made almost all academic libraries worldwide use technology in their daily operations to serve their users transforming it into digital libraries using Information Technology (Husain and Nazim, 2015; Sheikhshoaei, Alidousti and Nakhoda 2018). ICT tools and applications have brought about networking, resource sharing, access to more information resources have been increased and high speed in library routines with high-quality services to users (Peyala, 2011 and Husain and Nazim, 2015). This affirms Ani, Esin and Edem (2005), studies on the use of ICT-based application and ensured the need for academic libraries to adopt and provide computer networks. Elahi, Islam and Begum (2018) discussed in a study mobile and smartphone usage gradually replacing personal computers in enhancing information access and retrieval in Asia, Pacific, and the world with Bangladesh being the highest recorded with about a hundred million users. It was indicated in their finding that about seventy (78%) percent usage is making

information service providers realize the advantages of the mobile phone use in information access and retrieval. This confirms the studies of Coetsee and Weiner, (2013) with the minimal use of computers to mobile and smartphones.

In Ondo and Ekiti State in Nigeria, about 62.9% usage of ICT facilities has been applied to the normal library operations to provide quick services to information users Mkpojiogu and Udoma, (2018). Ani and Ahiauzu, (2008) in a study discussed in a finding how most university libraries in Nigeria automated and adopted the local area network in assisting the university community to access and retrieve electronic information and supported resource sharing and document delivery. In Ghana, Asamoah, (2013) in a study conducted on the use of smartphones in accessing information in academic libraries in the University of Ghana also discussed the use of smartphones as an ICT tool to explore different information however operating system, lack of familiarity and small size and resolution of the smartphone screens that come with smartphone usage in accessing information sources are challenging. Bentil, (2012) in a study affirms the use of smartphones in accessing e-resources in a study conducted in Central University libraries. Bentil, (2012) further posits on how ICT has tremendously changed teaching and learning procedures in Ghanaian universities as well.

Challenges of Effective Electronic Sharing in Academic Libraries.

Lack of Adequate Funds

Studies have indicated that funds have been a major barrier in Central university libraries (Husain and Nazim, 2015 and Alidousti, Nazari and Ardakan, 2008). Zimbabwe academic libraries also found it difficult to share their resources based on financial challenges and preservation of information resources (Samea, 2015; Kaur, 2018 and Alidousti, Nazari and Ardakan, 2008). Money has been the underpinning machinery of library operations.

Inadequate Supply of ICT Facilities

Inadequate ICT facilities in African countries have been a challenge over the past years as the development of ICT facilities has enhanced most developed countries' academic libraries to share their resources effectively. Lack of ICT facilities was identified as a major challenge in the Central University libraries in Indian in the past ten years. However, funds were later provided to support the development of ICT infrastructure (Husain and Nazim, 2015). In African settings,

most academic libraries are struggling in acquiring and developing the basic tools and the related peripherals that come with them to meet libraries' evolution. Sivakumaren, Geetha and Jayaprakash (2011) in a study observed inadequate expanded Local Area Network in Karnataka university libraries to benefit users in accessing and sharing of e-resources efficiently. Machimbidza and Mutula (2019) discussed in a study the struggle of two-state Zimbabwean universities in acquiring computers, adequate spacious computer laboratory, etc in facilitating e-resource sharing.

Internet Problem

Internet bandwidth cannot be overemphasized as we talk about ICT facilities. Miguel (2007) in a study posits that as academic and research libraries in Spain are sharing and easily accessing e-resources effectively with a high internet speed of broadband net of five hundred and fifty-five (155) MP, Tanzania Higher Education and College of Medicine in University of Nigeria are experiencing poor technology and low bandwidth in sharing their e-resource (Miguel 2007: Machimbidza and Mutula 2019). Studies indicate that aside South Africa, most sub-Saharan African countries face challenges with technological infrastructure and low internet speed (Machimbidza and Mutula 2019). Berkoh (2017) also identified in a study conducted in Ghana the limited online connectivity, unreliable, scarce, badly managed and expensive internet in African countries.

Power Surges

Electronic resources cannot be shared when there is a challenge of an unstable power supply. Many studies have indicated the instability of power supply in African countries affecting e-resources access among users and libraries as well (Oyedapo and Ojo, 2013). Berkoh (2017) in a study also mentioned the challenge of power surges in Nigeria and other African countries that interrupted easy access to an institutional repository. Ghana is not left out in the issue of power surges. Ghana recorded a high rate of power fluctuation (“doom so”) in the periods of 2012 to late 2015. This affected most activities in the country without mentioning academic institutions (Source: Ghana web [News: November 9, 2015](#)). Most universities in Ghana during that period opted for standby generators which burdened most organizations in terms of fuel purchase. Even the standby generator was rationed to reduce the cost of fuel purchase.

Information Service Professionals' Attitude towards Resource Sharing

The findings of Kalbande (2018) in a study revealed that the majority of librarians in academic libraries were willing to share resources among themselves. However, Alidousti, Nazari and Ardakan, (2008) in a study pointed out library managers' attitude of reluctance and lack of adequate cooperation among academic libraries caused resource sharing ineffective in most academic libraries in Iran. Machimbidza and Mutula (2019) asserted in a similar study in three universities in Zimbabwe that librarians benefited from sharing the cost of resources that is relevant to their university communities, however; they felt irrelevant in the selection process. The findings in a study by Uwamwezi (2017) revealed that the challenge of belongingness among academic libraries in the sharing of resources is due to the diversity of materials and a different system of library management in academic libraries in Rwanda. Giordano (2000) also in a similar study noted lack of a centre that governed the decision-making process in individual libraries has resulted in slow and frustrating cooperation. In a related study, Kalbande (2018) observed that resource sharing in Bangladesh academic libraries experienced positive and encouraging cooperation.

Methodology

The study employed a qualitative research design because it allows the researcher to get results to interviews that seek and stress answers to how social experience is formed and give meaning to questions asked (Punch, 2009). The Ghana Technology University College and Presbyterian University College Libraries were chosen as cases for this study because the two libraries are multipurpose campuses that enabled the researcher to obtain diverse views of information free from the staff. The population of the study consisted of the library staff of both university college libraries. The total staff of Ghana Technology University Library was six (6) with four (4) professionals and two (2) para-professionals of which one (1) is the electronic librarian at the time the researcher visited. On the other hand, the Presbyterian University College library has five (5) professionals and one (1) para-professional. This is illustrated below:

Staff Strength	GTUCL	PUCGL	Total
Professional	4	5	9
Para-professional	2	1	3
Total	6	6	12

Interviews were conducted and then thematic content analysis was used to transcribe the recorded interviews into themes as it was in the recordings in a written form.

Analysis and Presentation of Findings

Factors Influencing E-resource Sharing in Academic Libraries

The first objective of the study was to find out the factors that influenced GTUC and PUCG libraries to share e-resources. Under this theme, the questions that were asked were to ascertain how the factors influenced the two libraries' intention of sharing e-resources. According to the findings, the majority of the participants revealed the factors that include: budget cuts, the influx of technology, and information explosion as a result of the exponential increase in technology in the library operations.

Budget Cuts

The head librarians of both GTUC and PUCG libraries were asked about their budget allocation if it was enough to acquire the necessary facilities to meet the daily operations of the libraries. The head librarians indicated that the library has always been affected by budget cuts to some departments that seem important. The libraries have suffered low budget allocation all the time which has influenced electronic resource sharing among the libraries.

According to GTUC 4:

“Budget allocated to the library as a department is very low...the library has always suffered budget reduction as the years go by... You can bear with me that subscription and acquisition of information materials keep increasing. Even public university libraries suffer the same how much more we the private ones and even affected with low student population”.

PUCG 3 also mentioned that:

“ The library budget has always been low and you can imagine this time as the institution is struggling to fund the whole institution’s activities. The library must also stand the test of time so our library must find ways of meeting the information needs of users ”.

Results from the findings brought to bear budget cuts influenced e-resource sharing indicated by the majority of the participants illustrated (Uwamwezi, 2017).

Influx of Technology

Participants were asked during the interview if technology has influenced library operations. The majority of the libraries' participants revealed how the trend of technology has changed today's libraries' operation. Three (3) of the participants further indicated that academic libraries are now turning into the digital or virtual library and for that matter, PUCG and GTUC libraries must, therefore, follow suit to remain relevant in the institution they operate.

PUCG 1 was with the opinion that:

“ We are in the technological age so the library must change the way things are done to meet the current situation academic libraries operate ”.

PUCG 6 also indicated that:

“Academic libraries are not in a building again ...they have moved into digital so that it can be accessed anywhere and anytime. It is, therefore, a technology that has brought these changes we are talking about.”

GTUC 5 also mentioned that:

“The period or era we find ourselves as far as academic libraries are concerned is technological age... so GTUC too must follow suit to remain relevant in this period we find ourselves”.

The results showed from the findings that the majority shared the view of the influx of technology as a factor which their libraries to share e-resources (Haneefa, 2007 and Tandi 2014).

Information Explosion

Participants were asked with another question of what they would consider as the factor that influenced e-resource sharing in their various libraries. Six out of the twelve participants shared their opinion of information overload as:

GTUC 6 was of the view that:

“The internet has increased information production and the end product result in an information explosion. Every individual is using the internet one way or the other... as academicians, researchers keep researching into a phenomenon and the study is published on the internet”

PUCG 5 also explained that:

“Publishers of journals keep publishing papers by individuals and for that matter, the amount of information on the internet keeps increasing every single day...”

GTUC 1 also noted that:

“People in academia are promoted based on the number of papers one publishes...for instance, if twenty senior members or professionals from the library alone write papers and publish; you can imagine the amount of the result of this publication. Because of this, people are writing to be published to be promoted resulting in information overload”.

PUCG 4 mentioned that:

“Databases and academic journals publishers also publish information. This publication would result in an information overload...”

The results depicted from the findings that the majority of the participants indicated that information overload has also been another factor in sharing e-resources (Reilly, 2013).

Availability of ICT Facilities

Functional E-Resources section or Department

Participants were asked if their libraries have a fully functional e-section or department.

PUCG 2 imitated that:

... “Though I don’t have e-resource department as compared to big academic libraries like UGL, I have made a section of my library an e-resource section”.

GTUC 4 also explained that:

“I have e-library through which I share our e-resources to the university community though it is not a separate room or department... It is inside the library and management even intends to build a proper e-library since we are a technology university”.

GTUC 3 was of the same view that:

“Yes... That is where all e-resources are shared among users in the university community but not as compared to those big university libraries but we are managing with the one we have here”.

PUCG 6 also identified that:

...” Yes, I have but not a department but a section of the library is demarcated to share resources among users to meet their information needs with few computers”.

GTUC 5 posits that:

”Yes I have because of the graduate students, I have to get something in place to support their research work because they use the library and resources a lot in my library” ...

PUCG 5 also shares the view that:

...” It is neither a section nor department but part of the library because my library is small so everything thus departments is found within and forms part of the library activities”.

GTUC 6 also noted that:

...”I have but not a department. I have managed to get an e-resource section with four computers though I am waiting to be hooked onto the main campus e-resources. I have to try my possible best to serve my users to meet the information needs”.

PUCG 4, and GTUC 2 however raised an issue during the interview and they stressed that:

...” No, in our various libraries we do not have that is a major challenge to us because academic libraries have now gone digital and the majority of libraries are using ICT facilities to grant their users quality services(PUCG 4).

“We are willing to provide quality services in meeting our users’ information needs but here we are... our libraries don’t have a section or department of e-resources. However, we are trying our possible best in meeting the university community information needs” (GTUC 2).

Results indicated from the findings that the majority shared in their view lack of e-resource section or department in the libraries (Quagraine, 2017).

Library Automation

Participants were asked during the interview if their respective libraries are automated or computerized. Eight (8) out of the twelve representing majority of participants gave a positive answer as far as automation and computerization are concerned. Four out of the total participants indicating few participants however answers are given weren’t encouraging in terms of library automation.

PUCG 2 explained that:

... “Yes. My library is automated using the library system called the KOHA Management system. We have OPAC. The majority of our prints materials have been uploaded. We are still in the process of uploading the remaining materials just the internet speed has been our major challenge”.

PUCG 3, PUCG 1, PUCG 5 also affirms that:

"Yes we have Koha management system in place just that not all the prints materials are uploaded. However, the majority of the physical books have been uploaded if it wasn't the challenge of low speed of internet and other challenges like inadequate staff strength, we would have finished... I do everything thus technical things like cataloguing. One staff at a time o; we would have finished by now. Nevertheless, we are making use of what we have for now and users are satisfied with the services provided" (PUCG 6).

GTUC 5, GTUC 3 also concluded that:

... 'The library is automated and in full use. Users can access the OPAC'" (GTUC 4).

During the interview, just two (2) out of twelve representing a few participants indicated that their libraries are not yet automated and cannot give the reason why the library is not automated. Everything depends on management and the problem is funds, computers, and power supply and internet connectivity being the major challenge.

GTUC1, GTUC 2, GTUC 6 affirms that:

"No. the library is not automated yet. Everything depends on management. We have been assured of it so we are still waiting for the time..." (GTUC1).

..." Even there are no computer facilities how much more talking about automation. It is a computer that will be used to do the automation but I think the main library has been automated. Here, the library is not" (GTUC 6).

The library is about to be automated...Promises have been made to computerized the library so we are hoping it happens early" (GTUC 2).

The results from the findings depicted by the majority of the participants indicated partial library automation (Mulimila, 2000).

Adequate Infrastructure

Participants were asked during the interview if the library has put in place infrastructure for constant power supply, internet connectivity and stable technology to support e-resource sharing.

Some of the participants had issued one way or the other as far as infrastructure is concerned. Though they may have but not adequate and some to do not have at all.

PUCG 6 illustrated that:

...” The infrastructure is there but they are inadequate. The computers that are available too do not function well. We are just managing to work”.

PUCG 5 also mentioned that:

”There is somehow adequate infrastructure...Since I get some to work with, I will say I have. I can’t complain much since my library is small so the little that I am provided with I have to work with it”.

Electricity

According to the findings, participants indicated how relevant it is to get a stand by generator to provide continuous services and operations in the library. When asked if their respective libraries have put in place facilities that will provide a constant power supply some said they have while other libraries said they face the challenge of power supply to providing continuous services. Those participants whose libraries do not have as indicated rely solely on the national grid.

PUCG 1 also illustrated that:

...” There is a standby generator so immediately the lights go off, the generator is switched on. There is no problem”.

GTUC 4 also concluded that:

”The University has a standby generator so when the light goes off, the generator is switched on so with that we don’t have a problem however it is inadequate in the sense that it supplies the whole university community. If the library alone gets its generator, it will be very appropriate...”

GTUC 3 also shared the view that:

...” Yes. The library has so when the light goes off the library falls on it to provide power to continue the operations of the library”.

PUCG 5 also affirms that:

...” My library has a generator so as soon as the light goes off; the generator is switched on to provide the library with power”.

PUCG 3 also indicated that:

“In my library here, I have a stand by a generator so whether the national grid goes off or not I always have a power supply. Light is not the library’s major challenge. There are also Uninterrupted Power Supply (UPS) to every computer so when the power goes off or no fuel in the generator, users’ access information for a while but the lighting is not a problem as I said earlier because there is a stand by generator” ...

GTUC 6 emphasized that:

...” I am even without light in my library currently. Even when the prepaid credit gets finished and is not light off, there is no light. I mean, there is no stand by generator too. I have put in a request and have been assured of getting one as soon as possible. I am still waiting as to when it is coming I cannot tell. They will say, “It is in the pipeline”.

GTUC 1 and GTUC 2 affirm that:

“In my case, there is always light from the national grid so I do not face power supply in some way but when the national grid goes off, everything comes to a halt. There is no generator here at the moment” (GTUC 1)

...There is no stand by generator. The light is always on. Hardly does the light goes off but we pray we get a generator in case of any unforeseen event that will take us by surprise whenever the light goes off” (GTUC2).

PUCG 4 and PUCG 6 mentioned that:

..”In our libraries, there is no stand by a generator so when the power goes off; we have to wait for it to come before we can continue our operations in the libraries. We have drawn management attention and hoping to get one as soon as possible. As it is not ready, we are just trying our best to serve our clientele. When the light goes off then we stop everything and wait

for the light to come before we can continue what we are doing. The users have been complaining but nothing can be done without management coming in. The library cannot do anything since it is not generating any funds. Even, the money generated in the library is something meager that cannot buy a generator so we still have to rely solely on management”.

..When the light goes off, everything ends because there is no generator to provide stable power” (PUCG 6).

The results of the findings showed that the majority of the participants concluded the challenge the libraries have as far as power is concerned (Berkoh, 2017).

Fast Internet Connectivity

Participants were asked during the interview if their libraries have fast internet connectivity. Almost all of the responses were not encouraging. Seven (7) of the participants indicated they have internet connectivity but it is not fast at all. Five (5) participants also said the internet is very slow that one cannot do anything with when students are around because it is Wi-Fi.

PUCG 4 and PUCG 6 posit that:

” With the internet issue, it is a very big challenge we are facing. The internet is very slow. Most times the Wi-Fi is been used and it provides internet services for both users and staff of the library...” (PUCG 4)

...” The internet bandwidth is small which must be increased” (PUCG 6).

GTUC 6 illustrated that:

”The library is not networked. At least the library must have Local Area Network (LAN) so that internet connectivity can be a bit faster. I am using the router so if more users come around, it becomes very slow and when the credit on it finishes, I have to recharge that also makes internet usage very slow...I have to stop whatever I am doing to buy credit to recharge it which also delays the provision of quality services to users. Here too, one staff comes at a time where human resources is another challenge altogether. I am hoping to be hooked onto the mainline at the main campus”.

GTUC 1, GTUC 2, PUCG 4 also affirms that:

...” *With internet connectivity, it is very slow. The bandwidth is very low to serve the whole university community. This makes the work very discouraging. You have the zeal to work and the internet is very disturbing. Users may think you hold the internet and must work faster but that is not the case” (GTUC1).*

...” *The internet bandwidth is very small that makes the speed very low. This makes library operations very slow and sometimes too is used in performing a particular task in the library too like cataloguing etc”.* (GTUC4).

PUCG 5, PUCG 2, GTUC 3 also indicated that:

...” *Internet is the major challenge in e-resource sharing. We are in the technological age and everything boils down to the internet and here is the case the internet connectivity is very slow. There are no measures put in place to curtail these issues. The university community relies solely on Wi-Fi that is somehow disturbing. You know the number of users on campus, so everybody happens to be on the internet, what is going to happen? The system is going to be very slow and this is the case here” (PUCG 5).*

...*Internet is a major issue because it is the internet that comes after computers to share e-resources. These two facilities too work hand in hand but the internet supply is very disturbing” (PUCG 2).*

... *Users are forced to use their internet connectivity which shouldn’t be so because we have billed every user internet facility and here is the case where they turn to bring or use their modems and other internet connectivity which is very bad on the part of the library you see. They turn to blame us the library staff” (GTUC 3).*

Results of the findings illustrated low bandwidth resulting in low speed as a major challenge in e-resource sharing as pointed out by the majority of the participants (Asogwa, Ugwu and Ugwuanyi, 2012).

Adequate Computers

Another question was asked if the various libraries have adequate computers. The answer given by participants wasn’t encouraging. Seven (7) out of the twelve indicating majorities of the participants said they have but cannot cater for every user that comes to the library. On the other

hand, five (5) of the participants also affirms that some of the computers are not functional just a few works.

GTUC 6 mentioned that:

" I have managed to get four computers to serve my university community. I am hoping to get well functioning computers to serve my users. There were even no computers at all previously. I came to put in place these four computers...I still need more to make the work more relaxed and flexible. Those who have personal computers (pcs) come with them. Some users even do not come at all to access the e-resources that I have managed to put in place. Such users come to consult prints and past questions".

GTUC 4 also affirms that:

... "Users come with their PCs. Management says as this place being a technology university, they are going to refurbish the e-resource very well though we have an e-resources section. The majority of the computers have been moved to the computer laboratory so anyone who wants to access the e-resources in the library, must come with his/her pc. Since the whole university is Wi-Fi connectivity, users can sit anywhere to access information. They only come as and when they need assistance in the library".

GTUC 1, GTUC 2, and PUCG 4 also explained that:

"It is computers that are used for the e-resources and we do not have. How are we going to share the resources among users and another university library? This is a big challenge. (GTUC1).

"Users come with their own pcs to access the e-resources. With the case of the GTUC campus here, we don't have any computers... We use to have it but now they are not in use. Promises have been made to refurbish the place as soon as possible and therefore must be hooked to the mainline at the main campus before one can access the e-resources subscribed. So we are still waiting" (GTUC2).

...” At PUCG here library, there is only one computer which is used purposely for administrative purposes. Users can’t make use of any computer within the library unless they come with their PCs” (PUCG 4).

PUCG 1, PUCG 2 and PUCG 6 identified that:

...” We have computers but not adequate to support for e-resource sharing. Even me myself, I use my pc to work with. The computers available are just a few” (PUCG1).

Extensions have been done to the computer laboratory so if the number increases in the library premises, ...Users turn to consult the lab which shouldn’t be so but for now, that is what we are using to assist our users” (PUCG 2).

..Users turn to use their PCs since the computers are not adequate if only a user has, he/she must use it” (PUCG 6).

The findings indicated inadequate computers have been a challenge in sharing e-resources in the libraries (Husain and Nazim, 2015).

Stable Technology

Another question was asked about the stable technology put in place for e-resource sharing. Participants gave their respective answers.

GTUC 6 indicated that:

....”No photocopier can be used. Management has the intention to provide one outside the library which they want to manage the photocopy services. Aside from this, there is no telephone and other facilities that will enhance e-resources sharing. When it comes to telephone, I use my phone for e-resource services”.

GTUC 4 and PUCG 3 also mentioned that:

...” Telephones have been made available by management to facilitate my day-to-day responsibilities as far as e-resource sharing is concerned. Monthly recharge cards are provided besides” (GTUC4).

I have been given a telephone that enables me to assist other satellite campuses when it comes to e-resource sharing and other tasks as well...” (PUCG 3).

GTUC 1, GTUC 5 GTUC 3 and GTUC 2 also affirm that:

..” Though we are given recharge cards by our institution so that is what we use to assist in e-resource sharing. However, no telephone has been provided. The telephone is an intercom that functions within the university premises. But with a photocopier, it is available that enhance our line of duty here in the various libraries” (GTUC 1)

”The credits I get are used to assist my users with reference services... Sometimes, the users call in for information so I normally call back to deliver the information, and sometimes too I send messages” (GTUC 5).

...I also use it for administrative purposes aside reference service I give to users in my library” (GTUC 3).

... I use it to assist users” (GTUC 2).

A follow-up question was asked how the credits are used in assisting users.

GTUC 2 opined that:

“Sometimes users call with a query even sometimes how to start an assignment given them or where to retrieve information using the databases, I then take the user through...”

PUCG 1, PUCG 2, and PUCG 5 also raised the issue that:

...“There is no telephone let alone recharge cards to provide services to users. We use our phone in discharging our duties when it comes to e-resource sharing (PUCG 1)

“When the need arises for assistance from the users, you are left to use your phone and call credit... You just want to help a needy user to get information to meet his/her need (PUCG 2).

... I use my phone to provide reference services mostly (PUCG 5)

The results of the findings showed inadequate other technologies as pointed out by the majority of participants (Asamoah, 2013).

Challenges to Effective E-resource Sharing

Participants were asked with another question on what they would consider as challenges to effective e-resource sharing in their various libraries. Every participant has a barrier one way or the other.

GTUC1 and GTUC 2 affirm that:

...” Our major barrier is computers to set up the e-resource section even within our library and the e-resources itself since we are not connected to the main campus internet supply (GTUC1).

Another is funds and slow internet speed... No stand by generator in case electricity power goes off though we don’t experience it here in case it happens we have to stop everything the library is doing” (GTUC2).

PUCG 2, GTUC 4 and PUCG 6, also identified that:

....” Low internet bandwidth that makes the internet very slow. With e-resource sharing, everything depends on the internet so if the internet is slow, sharing becomes very disturbing. How can one fall on another library when the need arises? This makes the service quality some way” (PUCG2).

..”Some of the sister libraries are unwilling to support the small libraries when the need arises. This has been a challenge for us to fall on them for assistance” (GTUC 4).

”Some also do not have the trust for another library returning any borrowed materials sought for. Sometimes, materials that are sought to don’t come back. They get missing along the line especially the prints ones. This too hinders effective sharing...” (PUCG 6).

GTUC 6 mentioned that:

...” There are inadequate facilities in general like computers, photocopier, telephones; power supply, low internet bandwidth. Space also comes in here since the library is very small”.

PUCG1.PUCG3 and GTUC3also raised the issue that:

... “Though we have internet connectivity it is quite low. If something can be done to it, it would be better. Human resource is another issue altogether. This makes the work very tedious. All your time is taken for work. Those of us who are just two, one comes in the morning doing everything including technical things, referencing, circulation and so on then the other comes to continue the same routine. This makes the work very tedious as I have identified it earlier” (PUCG 1).

..The internet is very slow that makes e-resource sharing difficult” (PUCG 3).

..One can’t complain so much about the internet what about those who don’t have? So we work with the little available, however, it is a challenge or barrier that hinders effective e-resource sharing. Another thing too is the unwillingness for the big academic libraries to assist when one falls on them when the need arises” (GTUC 3).

PUCG 4 also affirms the issue that:

...”.Funding in our part of the world is our challenge. Money is used to get these facilities and if there is no money the necessary facilities can’t be acquired to share resources electronically. Even the public and big libraries are still crying for money how much more us the private and small libraries. This is where the challenge comes in here. Lack of funds has made my library incapacitated. I won’t talk about human resources at all. Management will say there is no money so they can’t employ so we the small hand will continue to do everything”.

The results of the findings indicated that the majority of the participants asserted that computers, poor internet speed and funds have been the major barrier that affected e-resource sharing (Kaur, 2018).

Discussion of Findings

Factors Influencing E-resource Sharing in Academic Libraries

Before any library considers e-resource sharing, there must be some factors that would influence that library. Given this, most libraries consider economic hardships, lack of adequate infrastructure both ICT and other information resources just to mention a few. Regarding the

university libraries under study, the major factor that influenced GTUC and PUCG libraries to share e-resources was budget cuts. The findings of the study revealed a massive reduction in budget allocations of the two libraries. This affirms a study by Reilly, (2013). According to Reilly, the hardship most universities experienced economically during the cold war and foreign policy era in spearheading communism made most academic libraries including well-endowed ones incapacitated in terms of budget cuts and reduction in U.S federal support to academic libraries. It was revealed by participants that private universities in Ghana are in hardship economically with regards to reduction in students' numbers. Students' number has an influence on the operations of the universities and the libraries as well. If the number reduces, it affects everything hence the reduction in budget allocation. This affirms a study by Akpohonor, (2005). According to Akpohonor, funds for Nigerian library and information services are traditionally derived from a parent institution. These revenues vary from a fixed percentage of an institution's overall budget to an ad hoc arrangement. Most libraries receive far less funding than the percentage that is usually earmarked for them.

PUCG and GTUC libraries experienced the challenge of acquiring electronic resources due to an increase in subscription day in and day out. This affirms studies conducted by (Kimanga, 2018; Kaur, 2018; Ji and Kim, 2016 and Posigha, 2015). Asamoah-Hassan (2013) in a study discussed how academic and research libraries in Ghana and developing countries were empowered by International Federation of Library Associations and Institutions (IFLA) in 1996, with support from International Network for the Available of Scientific Publications (INASP) and Electronic Information for Libraries (eLFL) to increase their limited e-resources successfully.

The influx of technology is another factor making PUCG and GTUC share e-resources. The findings indicated by the participants that academic libraries' operations have been supported by ICT-based tools globally and it was, therefore, necessary for GTUC and PUCG libraries to follow suit to the current trends of academic libraries' routines to remain relevant in the university they operate. This affirms the study conducted by Haneefa, (2007) and Tandi, (2014). Their studies posit that academic libraries have moved from the old traditional form of the normal routines into a more digitized manner with the aim of access and retrieval of electronic resources. Cox (2018) also argued that academic libraries have shifted from being the "heart" of

the university and rather need to impress the university stakeholders and the user community who expects more and do not see their worth as a body in the university.

In addition to this, the findings of the study revealed the increasing information overload caused PCG and GTUC libraries to share resources electronically. It was explained by participants that the rate at which information is increasing day in and day out has created some challenges in academic libraries with space of holding this vast of information at the individual libraries. This is supported by Reilly (2013). According to Reilly (2013), the challenge of space of holding increasing information on the part of academic libraries that have them and finding ways of averting the menace has made academic libraries evolved into virtual with the limited space available turned into research building or space, reading rooms, etc. This affirms Quagraine, (2017) study. According to Quagraine, (2017) majority of academic libraries globally are putting other mechanisms such as learning commons buildings, information management systems, coverage service models just to mention a few in place to meet the information needs of its users in this digital age. However, the limited space has been used by other libraries to create the print collection and seating accommodation in some other private university libraries in African and Ghana to be precise. The findings further revealed PUCG and GTUC libraries filtering the overload information into relevant ones to serve their clientele through cooperation.

Available ICT Infrastructure

For effective e-resource sharing, there must be adequate ICT infrastructure. No library can share resources without ICT facilities. The finding, therefore, revealed that both GTUC and PUCG libraries were not adequately equipped in terms of ICT facilities to share e-resources though; these libraries were trying to meet the current trend of academic libraries in the world. It was revealed in the findings that both GTUC and PUCG libraries were automated though. However, the PUCG library's automation was partial and works were ongoing with a section of the library demarcated as an e-resource section with just a few computers as at the time data was being collected.

This has made automation works in the library very slowly as a result of low internet speed. This supports a study by Husain and Nazim, (2015). According to them, the implementation of ICT and information sharing tools was very slow in University libraries in India though there were

indications of them. On the other hand, GTUC uses to have a well functional e-resource section in the library but it was revealed that the section has been collapsed with the computers moved to the computer laboratory. The respondents gave the reason that as the GTUC is a technology university, the ICT laboratory is going to be refurbished to support all IT services in the university community including the library. This is supported by Sivakumaren, Geetha and Jayaprakash (2011) study. According to Sivakumaren, Geetha and Jayaprakash (2011) identified in a study the Local Area Network (LAN) was not adequately expanded to enable users to benefit from electronic information in Karnataka university libraries. On the other hand, Raubenheimer, (2014), asserted in a study that the installation of the automated system has allowed the University of South Africa (UNISA) library to serve users by transporting materials with speed delivery of information request.

Plans were to link these two libraries (thus GTUC and PUCG) with the computer laboratory to share e-resources effectively among users. This affirms a study by Ibrahim, Asiedu and Aikins (2017) and the study revealed that a forty 'seater' air-conditioned ICT laboratory linked to the library of the Nyankpala campus of the University of Development Studies has made users access e-resources from CARLIGH. There was also wireless internet connectivity as the findings revealed however, the bandwidth was very low making access and retrieval to information very slow and disturbing during the peak period. For effective e-resource sharing, internet connectivity is another facility that cannot be mentioned. Electronic resource sharing requires stable internet connectivity to facilitate easy access and retrieval of information anywhere and anytime the user needs information. Dadzie, (2005) in a study observed how Ashasi University uses internet connectivity (wireless) to link three campuses in sharing e-resources among users of the university community. Neerpuuth (2013) also noted the challenges of internet bandwidth that hinder effective e-resource sharing.

Again, there were issues with electricity. Both libraries do not have any stand by generator but the only available generator generates power to the whole university and in some cases, power was given to departments that seem important anytime the light goes off. Every activity must come to a standstill in the libraries. This support Berkoh, (2017) in a study on poor power supply been noted as a major challenge in ICT growth in most Nigerian universities. Sharing resources electronically need a constant power supply. Participants labeled this to lack of funds that

management must do something about it. This affirms Asogwa, Ugwu and Ugwuanyi, (2012), Asubiario, (2017) and Kaur, (2018) and their study reveals that lack of internet, weak I.C.T infrastructure, funding, intermitted power outages and university libraries without proper websites and websites dedicated to the library are limitations to effective and efficient services delivery and access other electronic resources outside the library building.

Other ICT tools that facilitate e-resource sharing and virtual library services such as telephones and photocopiers that would enhance e-resource sharing among academic libraries were inadequate which was revealed in the findings at both GTUC and PUCG libraries. IT expertise is another requirement that needs to be addressed in e-resource sharing. In GTUC and PUCG libraries e-resource librarians are professional librarians with little knowledge in IT. Findings revealed that GTUC being Technology University was expected to have more IT personnel to support the library's operation; however, there was only one IT personnel whereas the PUCG library has no IT person during the data collection period.

On the other hand, staffs of both libraries are ready to adapt to new changes in the library settings when any training is given. Regarding the installation of the ILMS- KOHA, staff of both university libraries were given ample training to enhance their normal routines of the library. In addition to this, it was revealed that both staffs of GTUC and PUCG libraries frequently attend all programmes regarding seminars, conferences and workshops organized by both library association and CARLIGH to enable staff to be abreast of the current trend of libraries evolution. There is other commercial integrated library management system software available that includes sierra integrated management system, millennium integrated management system just to mention a few by which University of Ghana Balme Library and University of Allied and Health Science (UHAS) library has acquired and use. The findings revealed the use of KOHA ILMS in both GTUC and PUCH libraries. This affirms the study conducted by Upasani, (2016) revealed how Open Space System (OSS) and other commercial Integrated Library Management (ILM) are enhancing service delivery of academic libraries. The current software is used to facilitate normal library routines. Sivakumaren, Geetha, and Jayaprakash, (2011) in a study identified inadequate hardware, software and low internet bandwidth and further recommended that funds must be allocated to acquire ICT facilities.

Challenges of E-resource Sharing in Academic Libraries

In Ghana, as one of the countries in the sub-Saharan Africa, sharing of e-resource is a bit challenging. The majority of academic libraries find it difficult in providing quality services in meeting users' information needs. Given this, the findings revealed the barriers that affect the effectiveness of e-resource sharing. Similar challenges were recorded in both GTUC and PUCG libraries. Some of the participants believed that lack of funds and inadequate ICT facilities contributed to the ineffectiveness of e-resources sharing in their libraries. Participants mentioned that needed funds to acquire adequate ICT facilities to support the libraries' operations were not forthcoming and for that matter users find it very difficult to access and retrieve relevant information. Some of the participants were of the view that sharing electronic resources depends solely on computers and fast internet connectivity. However, these facilities are inadequate. This affirms a study by Asogwa, Ugwu and Ugwuanyi, (2012) and Kaur, (2018) that the challenges of lack of internet, weak I.C.T infrastructure, and funding, intermitted power outages are limitations of effective e-resource sharing in academic libraries. In a related study by Asante, (2010) on networking in academic libraries challenges and prospects posit that three university libraries had well-functioning electronic systems that facilitated e-resource sharing in academic libraries. Other participants believed that the management of the two universities should provide adequate facilities that would facilitate e-resources to stand the test of time in this information explosion era libraries find themselves. This is affirmed by Asante, (2010) that university libraries must be provided with adequate budgets by their parent institution to meet library needs. These participants strongly believe that services rendered at the libraries do not generate enough money to acquire the needed facilities to support effective resource sharing. Some participants indicated the low internet bandwidth making the speed of it very slow.

Conclusions

As academic libraries have shifted from the traditional building into a more virtual one, libraries that still hold on to the old tradition will soon become irrelevant in the parent institution they operate. It has been established that funding of modern academic libraries is capital intensive. Acquisition, management, dissemination of information resources as well as maintenance, repair of ICT peripherals and training expertise to handle current library services come with a huge

cost. Private academic libraries in their current situation are handicapped financially and suffer from budget cuts. For these libraries to be able to stand the test of time, library collaboration with well-endowed institutions will be of great advantage. No library is an island that can operate alone not even the government-owned and well-endowed ones. Though there are a lot of challenges aside funds, like internet issues, electricity, etc in sharing of resources however, the benefits supersede these challenges since the user is paramount. It is therefore expedient for academic libraries to reconsider the trend libraries have become and try to move along with the change to remain relevant within the parent institution they operate.

Recommendations

The study recommends that GTUC and PUCG libraries should:

1. Have relevant budget allocation in the provision of information since the influx of technology has changed the trend of traditional library operations into more digital.
2. Again, the bandwidth of internet connectivity should be increased by the management of the institutions.
3. Ensure the provision of stand-by generators or think about solar panels to generate power for individual libraries when there are power outages.
4. Develop the ICT skills of library staff to enhance quality service delivery.
5. Maintain membership of CALIGH to reap the full benefits of its electronic sharing facilities at a reduced cost.

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