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## Availability of ICT Facilities and Utilization for Research Output in Ghanaian Academic Libraries: The Case of University for Development Studies Library Systems

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Availability of ICT Facilities and Utilization for Research Output in Ghanaian Academic Libraries: The Case of University for Development Studies Library Systems

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**Abstract**

The dynamic nature of information use has called for Information and Communication Technologies (ICTs) in entirely every field of the human venture, and information services and academic libraries are not an exception. The adoption of ICT based services has provided the platform where universities can source and access information easily. Though some studies on ICT availability and utilization have been conducted in the developed world, few studies on ICT services availability and utilization exist in Ghana, especially in the University for Development Studies (UDS). Underpinned by the Technology Acceptance Model (TAM), the study employed mixed research design to gather data from 300 library users, librarians, and library officers in the UDS. The findings revealed that four major ICT services (Wi-Fi, internet technology, digital library resources, and online public access catalog) are available across the five campuses' libraries of the University for Development Studies, Ghana. The findings also revealed that less available facilities/services in the UDS libraries are the E-mail facilities and the CD-ROM technology facilities while laptops and iPads were non-available for library users

to independently search for information in the absence of their personal laptops. Despite the perceived availability of library facilities and services, the usage of library services and facilities among library users in the UDS is generally modest. The increasing availability of ICT facilities and services has facilitated communication between libraries and among library users. As recommendations, the provision of ICTs facilities and services in university libraries must be accompanied by in-services training.

**Key Words:** Availability, utilization, ICT services, libraries, UDS, Ghana.

## **1. Introduction**

The dynamic nature of information use has called for Information and Communication Technologies (ICTs) in entirely every field of the human venture, and information services and academic libraries are not an exception (Mamman, 2015). ICT is a powerful driving force of development because of its overwhelming impact on the economic, scientific, academic, social, political, cultural and many spheres of life (Minishi- Majanja, 2007). The potential of Information and Communication Technology to transform development in both the underdeveloped and developed world is increasingly recognized by governments, Non-Governmental Organizations (NGOs), corporations and global agencies such as the United Nations (UN) (Gujbawu, 2004).

The introduction of ICT has led to the transformation of many aspects of human endeavours. Some of such areas are education, health, business, agriculture, and others. The growth in information and communication has significantly changed the nature of the work of academic libraries. These changes have resulted in new opportunities such as a digital library, hybrid library, electronic library, online cataloguing and other means of improving resources management and services. Universities globally have advanced in adopting Information and

Communication Technologies based services has provided the platform where information can be sourced and accessed easily (Dhamavanden, Esmail & Mani, 2008). Studies conducted to assess the frequency of information and communication technology facilities applications for the research output of postgraduates of universities in both developed and developing countries have shown that the application of these technologies have not been adequate leading to users having an aesthetic perception on the same (Adetimirin, 2012:130).

Information and Communication Technology tends to expand access to education and research. Through ICT, learning can occur anytime and anywhere. Research works have been enhanced as a result of the existence of ICT. ICT services have enabled research works to move beyond the exclusive dependence on printed materials to electronic platforms such as video clips, images, audio sounds, visual presentation. Currently, ICT has been enabled the transformation of the teaching environment into a learner-centered one (Castro Sánchez and Alemán, 2011).

As a result of the use of ICT, academic libraries have significantly changed in recent times with subsequent libraries' new roles to fulfill the continually changing needs of information in order to remain relevant in the 21<sup>st</sup> century. An academic library is defined as a library that is attached to institutions of higher education serving two complementary purposes; one purpose is to support the institution's curriculum and the second is to support the research endeavours of the institution (Curson et al., 2009). Academic libraries are there to serve the academic community, as such, their development is tied to their parent institution.

Education systems and academic institutions have greatly been influenced by ICT revolutions. In that regard, academic libraries are not exempted from this revolution but to adapt accordingly. The new development in academic libraries shifted from the old concept of book-oriented librarianship to user-centered librarianship (Raja, Ahmad, & Sinha, 2009:701).

Universities are established to generate knowledge and train people so that they can serve and advance the wellbeing of humanity. In order to contribute meaningfully to the development of the society, the academic library must be the pivot of the university. This is because all planning activities geared towards the development are derived from research and the library is the source of all research activities (Cox, 2010:120). The three main activities of Academic libraries are teaching, learning and research of the academic community, faculty, students, and researchers.

Despite the seeming availability of electronic information resources in the universities as well as their benefits to university education, their effective utilization by students and faculty have been hampered by several factors such as students minimal use of electronic resource function of the library, others also being oblivious of the existence of such electronic resource services and the apparent lack of technical know-how to operate and effectively put to use these electronic facilities (Rowley & Hartley, 2008:80). The dynamic and changing face technologies has brought about the need to deliberate on how in the digital era, ICT facilities have been used in academic libraries for research output.

## **2. Theory**

The theoretical underpinning of this research is the Technology Acceptance Model (TAM) (Masrom, 2007). The technology acceptance model (TAM) has its backgrounds in the theory of reasoned action (TRA) by Davis (1989). Davis (1989) theory of reasoned action (TRA) postulates that the behaviours of individuals are motivated by behavioural intention. An individual's behavioural intention is determined by his/her attitude toward the conduct and the subjective rules surrounding the act of his conduct. Conversely, an individual's behaviour and the intent to behave is determined by his/her attitude toward the behaviour and their

discernments about the behaviour. Hence, conduct is the function of both attitudes and beliefs (Masrom, 2007).

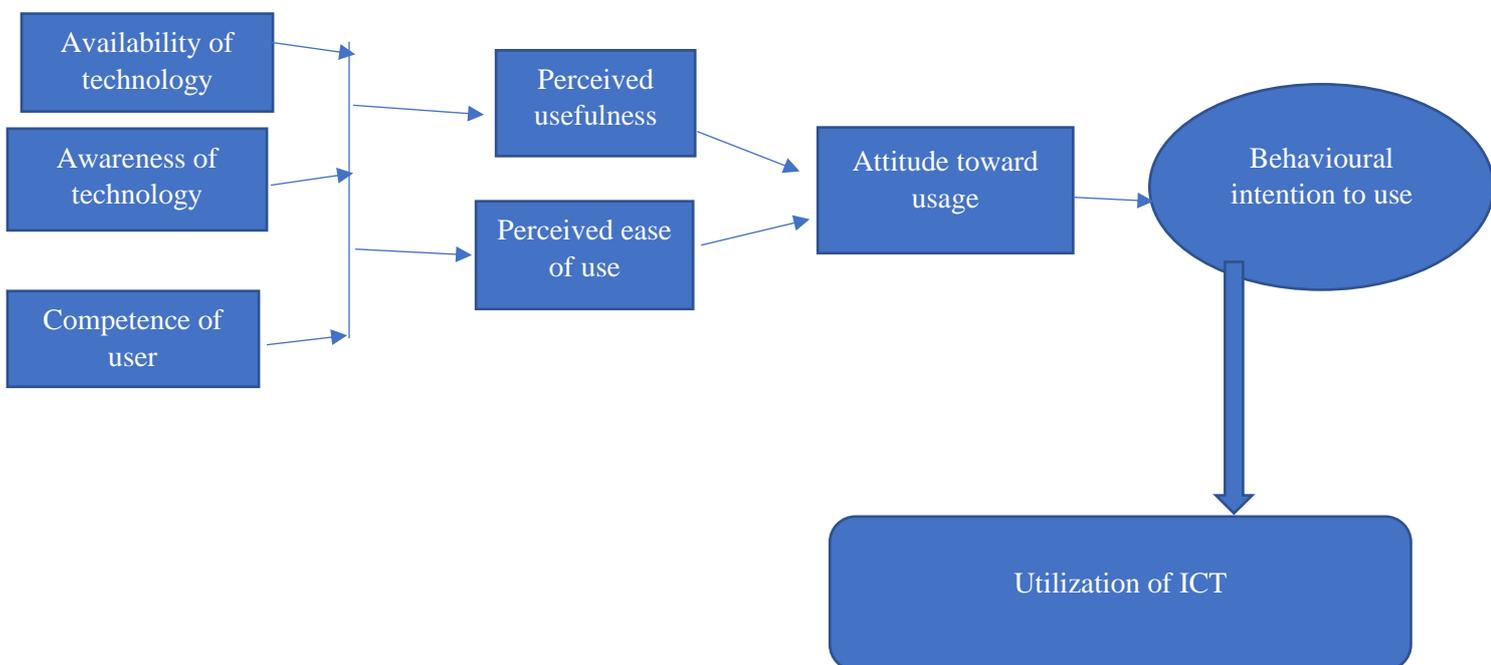
TAM on the other hand propositions that technology perceived ease of use and perceived usefulness are predictors of user attitude towards using that technology. Consequently, behavioural intentions and actual usage. Perceived ease of use equally determines the perceived usefulness of technology (Masrom, 2007). TAM has been applied in several studies trying to assess user acceptance of information technology, for instance, spreadsheet applications (Mathieson, 1991), e-mail (Szajna, 1996), telemedicine (Hu et al., 1999), websites (Koufaris, 2002), blackboard (Landry, Griffeth & Hartman, 2006) and e-learning (Masrom, 2007).

The application of this theory (TAM) in library information and communication technologies in the Ghanaian context has been limited. The theory (TAM) will be considered in this study to assess e-learning systems that make use of web and internet know-how in achieving the goal of delivering information to students, interacting and communicating with students via computer. In the application of TAM in this study, perceived usefulness refers to the extent to which the user believes that using the technology will enhance his or her performance. Perceived ease, on the other hand, refers to how effortless or unproblematic the user perceives will be when using the technology. Perceived ease and perceived usefulness are both considered different factors that influence users' attitude towards using technology (Masrom, 2007). However, Perceived Ease of use is also postulated to influence perceived usefulness and attitude toward using the technology. Finally, the TAM postulates that attitude towards using the technology influences the behavioural intention to use that technology.

This study postulates that apart from the perceived ease of use and perceived usefulness of technology, there are other critical determinants that influence the attitude and intention towards the use of technology. These variables include the availability of the technology,

awareness of the technology and competence of the user/individual. These three variables in addition to perceived ease of use and perceived usefulness determine the technology adoption and use (also attitude and behavioural intention).

**Figure 2.1: Technology Adoption/utilization Model (TAM)**



*Adapted and modified from (Masrom, 2007).*

All over the world, University students and staff are becoming more diverse and demand for e-learning based developments are increasing (Masrom, 2007) and Ghana for that matter UDS is not an exception. The factors influencing the acceptance, utilization, and use of e-learning need to be uncovered in the context of Ghana in order to aid in the development and improvement of the e-learning system. This requires issues of technological, pedagogical, and individual factors be taken into account. However, the absence of theoretical understanding in the context of Ghana on what factors determines

the effective delivery, utilization, and acceptance of e-learning has inhibited and continue to inhibit its development and improvement (Masrom, 2007).

It is undoubtedly clear that the arrival of e-learning know-how has lately made training, instruction and learning achievable on the Internet. E-learning comprises all forms of instruction that are simplified by the internet and its know-hows, and encompasses the use of the World Wide Web to sustain education and to deliver course content. Alavi and Leidner (2001) pointed out that e-learning represents one form of technology-assisted learning, which is defined as “an environment in which the learner’s interactions with the e-learning materials..., peers, and/or instructors are made possible through innovative information technologies” (Masrom, 2007).

At the individual level of information acceptance studies, the user’s attitude toward the application of technology are addressed in TAM (Davis, 1989). TAM is developed specifically for explaining as well as predicting user acceptance of computer technology (Hu et al., 1999).

Therefore, this study applies the TAM to study the acceptance of e-learning technology. The underlining aim of this study is to assess the availability of ICT technology, user awareness and competences (both students and librarians) of information services technologies as well as evaluate the determinants of effective utilization and acceptance of information communication technologies (e-learning) in the libraries of UDS.

### **3. Methodology**

#### **Research Design**

The descriptive research design was used for the study (Creswell, 2014) The descriptive research offers the opportunity to ask questions concerning what the characteristics of the study population are or what the situation under study are (Shield & Rangarian, 2013). A case study as a form of descriptive research design was used for the study. Case study according to Stake (1995) is a strategy of inquiry by which the researcher explores deeply of a program, events,

activity, process or one or more individuals. For the purpose of this study, the case study was used as a strategy of enquiring and exploring the benefits of applying information and communication technology in academic libraries in higher learning institutions particularly the case of UDS.

### **Research Strategy**

Both qualitative and quantitative research strategies were used. The quantitative strategy used questionnaire; a strategy under the descriptive research strategy to ask questions pertaining to the characteristics of the population being studied. Also, the quantitative approach used helped the study to reduce data collection from numbers for statistical computation in the form of frequencies, correlation and charts to assist analysis of the data collected (Anderson and Taylor, 2009; Creswell, 2014). For the qualitative strategy, the interviewing technique for gathering useful in-depth information necessary for the study was used. The qualitative strategy was applied to solicit empirical support with regards to the research questions as well as in-depth interviews that lead to non-numerical data (Denzin & Lincoln, 2011). This approach also enabled the researcher use a mixture of data collection procedures to collect detailed information on the various benefits in the use of ICTs in academic libraries of higher learning institutions and its effect on library services, users and research.

### **Data Collection Instruments and Methods**

The instruments used in collecting data were a questionnaire, structured interview schedule and observation checklist. The checklist was used to get eye witness of happenings with regards to the library users, particularly in the library rooms. The selected method for primary data collection was done in the form of interviews, questionnaires, and observations. Both closed-ended and open-

ended interviews were conducted as well as in-depth interviews and observations (Creswell, 2013;2014).

### **Sample size determination**

In determining the required sample size of library users for the study, the Slovin's sampling method was applied. The formula is illustrated as;  $n = \frac{N}{1+N(e)^2}$  (n= sample size, N=sample frame; and e= margin of error or confidence level).

As shown above, a sample frame of 300 library users, librarians and library officers were used.

A margin of error of 5% was then used. The sample size for the library users was then calculated by:

$$n = \frac{N}{1+N(e)^2} = \frac{300}{1+300(0.05)^2} = \frac{300}{2} = 150$$

### **Method of Data Analysis**

Steps were taken to categorize the findings into specific themes and summarized by way of descriptive analyses. Observations and discussions resulting from the interview were assessed by way of categorizing them in themes and inputting the information into the computer for both qualitative analyses. Statistical Package for Social Sciences (SPSS), STATA and Excel were used for analyzing the collected data.

## **4. Results and Discussions**

### **The availability of libraries technologies in UDS library**

From the study, all library users (100%) disclosed that they employ Information Communication Technologies (ICT) in their day to day search for information in the libraries. However, according to the library users, four major Information Communication Technologies (ICT) are available across the five campuses' libraries of the University for Development Studies, Ghana. They included Wi-Fi, internet technology, digital library resources, and online

public access catalog. According to the library users, the commonest technologies available in all the libraries is the Wi-Fi, disclosed by about (45%) of the respondents interviewed (See Table 4.1). And followed by the Digital library resources (22.2%), internet technology (15.2%) and Online public access catalog (13.6%).

**Table 4.1 Information Communication Technologies (ICT) available in the libraries**

Library Technologies	Responses	
	Frequency	Percent
Internet technology	37	15.2%
Wi-Fi	109	44.9%
Digital library resources	54	22.2%
Laptops and iPad	0	0%
Online public access catalogue	33	13.6%
E-mail facilities	8	3.3%
CD-ROM technology	2	0.8%
<b>Total</b>	<b>243</b>	<b>100%</b>

**Source:** Field Work, 2019.

**NB.** Frequency exceeded 150 because of multiple

responses

However, less available facilities/services in the UDS libraries are the E-mail facilities (3.3%) and the CD-ROM technology facilities (0.8%). None of the campus's library has Laptops and iPads for library users to independently search for information in the absence of their personal laptops.

Besides, the increasing usage of ICT services in all the study libraries was observed to have been informed by ICT training services users received in the past. From the study, 85% of the respondents interviewed disclosed that they have received prior training in ICT services and facilities usage, with most of the users observed to have attained such knowledge outside the University libraries. Comparatively, the training received varies from campus to campus within the University for Development Studies. For instance, majority of the library users (90%) in Wa campus of the UDS revealed that they received ICT training, followed by 88% of library

users in the Navrongo campus, 87% of that of users in the medical school, 84% of the users in that of Nyankpala campus and the least of all (57%) of that of library users in the Graduate school, Tamale.

Apart from the above, 93% of library users disclosed that their libraries use software for services circulation, draw on web-based support (89%), and with all software online (84.0%). However, on campus-specific cases, all the library users (100%) in the medical school and the Graduate school asserted that their libraries use software for services circulation compared to the other three campuses (Wa, Nyankpala and Navrongo campuses). Also, with the exception of the Nyankpala campus, all library users interviewed in the other campuses disclosed that web-based services were available in the libraries for utilization.

### **Information Communication Technological facilities available in the libraries**

Across all the campuses, respondents (library users) were asked to indicate the availability of Information Communication Technological (ICT) facilities in their libraries. From the study several Information Communication Technological (ICT) facilities specifically ICT hardware were found. They included computers, laptops, Networked servers, scanners, printers, local area network, LDC, World Wide Area Network and projectors amongst others (See Table 4.2).

**Table 4.2 Library facilities/ICT Hardware**

<i>Library facilities (ICT Hardware)</i>	<i>Yes</i>	<i>No</i>	<i>Not sure</i>
	N (%)	N (%)	N (%)
Computers	136 (90.7)	14 (9.3)	0 (0.0)
Laptops	35 (23.3)	107 (71.3)	8 (5.3)
Networked servers	125 (86.0)	10 (6.7)	11 (7.3)
Printers	126 (84.0)	16 (10.7)	8 (5.3)
Scanners	90 (60.0)	53 (35.3)	7 (4.7)
Local Area Network (LAN)	110 (73.3)	24 (16.0)	16 (10.7)
World Wide Area Network	99 (66)	21 (14.0)	30 (20.0)
LDC Projector	72 (48.0)	57 (38.0)	21 (14.0)

Video cameras	30 (20)	84 (56.0)	36 (24.0)
TV stations	17 (11.3)	108 (72.0)	25 (16.7)
Microfilm readers	6 (4.0)	104 (69.3)	40 (26.7)
Bar code readers	18 (12.0)	86 (57.3)	46 (30.7)
CD-ROM Readers/Writers	83 (48.7)	43 (28.7)	34 (22.7)
Book Check systems	82 (48.0)	42 (28.0)	36 (24.0)
Security check systems	61 (40.7)	62 (41.3)	27 (18.0)
Photocopying machines	130 (86.0)	17 (11.3)	3 (2.0)
Photo cameras	6 (4.0)	103 (68.7)	41 (27.3)
Generators to supply electricity during load shading	68 (45.3)	74 (49.3)	8 (5.3)

**Source:** Field Survey, (2018).

In general, computers, networked servers, printers, scanners, local area network (LAN), World Wide Area Network, LDC projectors, CD-ROM readers/writers, book check systems, photocopying machine, and generators were the most available hardware/facilities in the various libraries. 90.7% of the respondents disclosed the availability of computers in the libraries in which they search for materials, 86% disclosed of the availability of network servers, 84% disclosed of the availability of printers, and 60% disclosed that of scanners. In addition, 73.3% disclosed that of local Area network (LAN), 66% mentioned that of World Wide Area Network, 48% disclosed that of the LDC projector, 49% that of CD-ROM Readers/Writers, 48% disclosed of the availability of book check system, while 86% of the respondents revealed that their libraries have photocopying machines to support photocopying of information from books, reports, and articles that are limited in the libraries for borrowing and mostly place as reserve. However, hardware such as video cameras, micro-film readers, bar code readers, security check systems, generators for alternative power supply and photo cameras were observed not available in all the five (5) campuses libraries.

## Services available in the UDS Libraries

Across the entire University, several library services are provided to library users in the various libraries, ranging from internet web browsing services, the Email services, full text journal articles services, online public access catalogue, Bibliographic databases, the CD-ROM services, electronic book services, library website service, document scanning services, electronic reference and information services amongst others.

However, the most commonest services available in all the libraries for users include the internet web browsing services disclosed by about 86% of the library users interviewed, 77% of E-mail services, 98% of the online public access catalogue, full text journal articles services confirmed by 77% of the respondents, the online public access catalogue confirmed by 98% of the library users, the electronic book services ,84%, the library web services, 95%, the electronic reference and information services, 84%, the book reservation and call services, printing services, 80% and the digitisation services, 72% (See Table 4.3).

**Table 4.3 Services available in the UDS libraries**

<b>Library services</b>	<b>Yes</b>	<b>No</b>	<b>Not sure</b>
	N (%)	N (%)	N (%)
Internet web browsing services	129 (86.0)	15 (10.0)	6 (4.0)
E-mail services	120 (68.0)	42 (28.0)	6 (4.0)
Full-text journals articles services	115 (76.7)	7 (4.7)	28 (18.7)
Online Public Access Catalogue (OPAC)	147 (98.0)	0 (0.0)	3 (2.0)
Bibliographic databases	90 (60.0)	22 (14.7)	31 (20.7)
CD-ROM services	89 (59.3)	33 (22.0)	28 (18.7)
Electronic Books services	125 (83.7)	14 (9.3)	11 (7.3)
Library Website service	143 (95.3)	7 (4.7)	147 (98.0)
Document scanning services	91 (60.7)	42 (28.0)	17 (11.3)
Electronic reference and information services	126 (84.0)	18 (12.0)	6 (4.0)

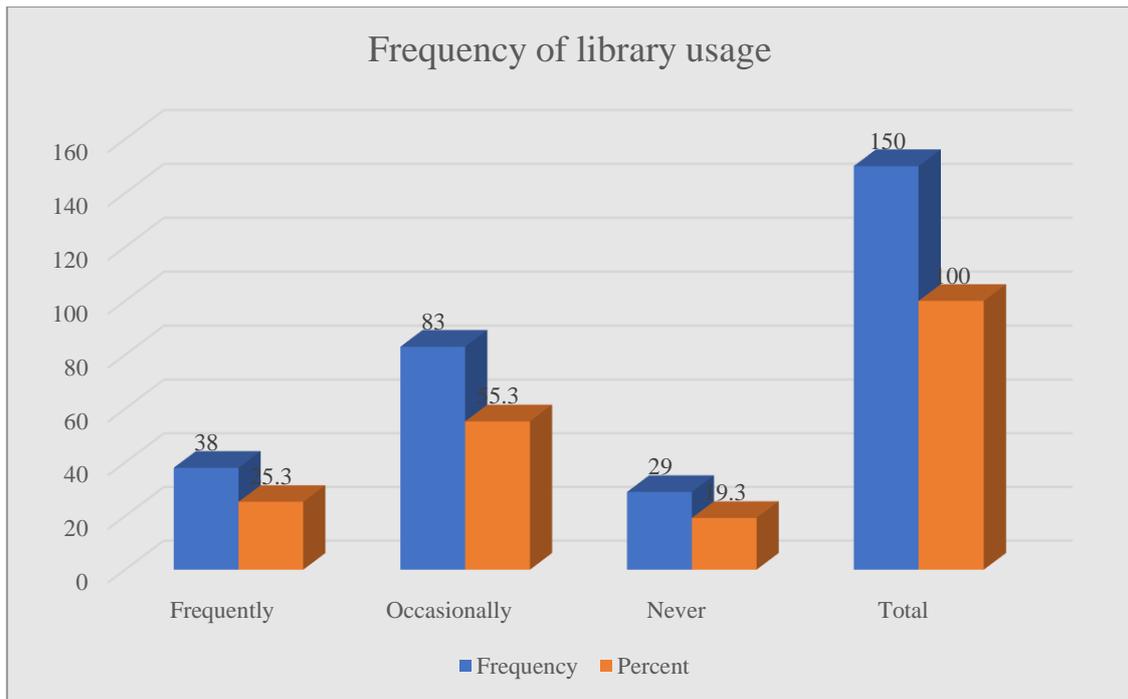
End users training program	94 (62.7)	20 (13.3)	36 (24.0)
Barcoded circulation services	76 (50.7)	51 (34.0)	23 (15.3)
Current awareness services	93 (62.0)	14 (9.3)	43 (28.7)
Book reservation and recall	107 (71.3)	23 (15.3)	20 (13.3)
Printing services	120 (80.0)	24 (16.0)	6 (4.0)
Photographic services	87 (58.0)	33 (22.0)	29 (19.3)
Digitization services	108 (72.0)	28 (18.7)	14 (9.3)

**Source:** Field Survey, 2019

Other services such as photographic services (58%), the bar-coded circulation services (50.7%), the end-users training program, document scanning services, CD-ROM services, bibliographic databases (60%) and email services (68%) are less prevalence across all the libraries in the various campuses of the University for Development Studies.

### **The utilization of library facilities in the University for Development Studies**

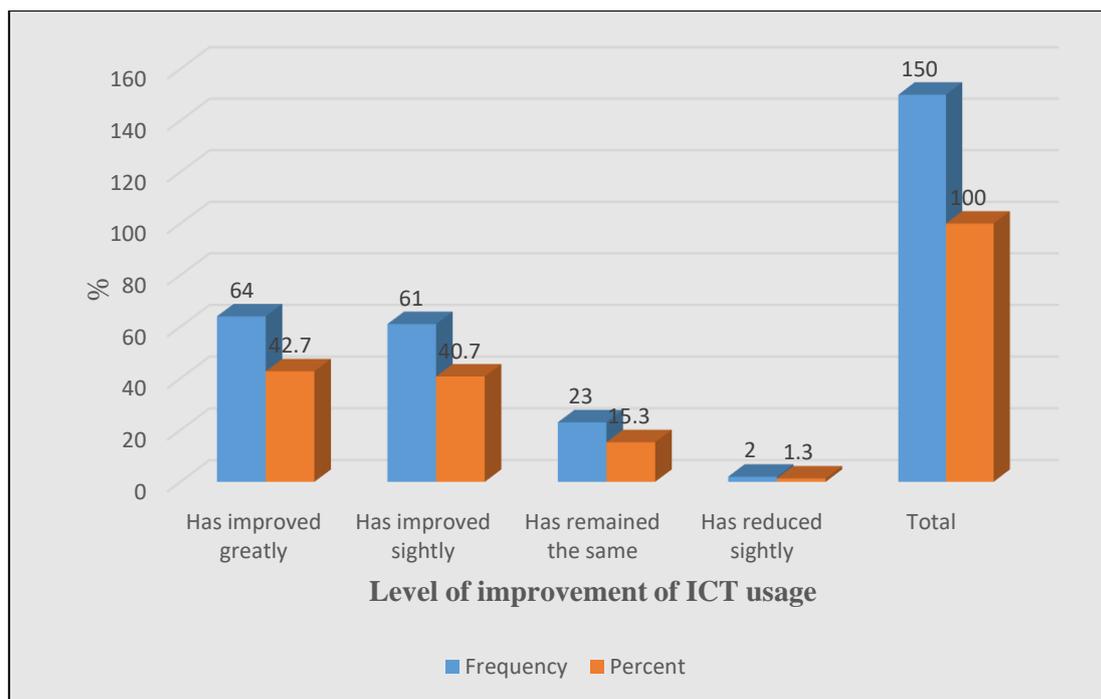
Despite the perceived availability of library facilities and services, the usage of library services and facilities among library users in the UDS is generally modest. Across all the campuses' libraries, evidence from the survey indicates varying degree of library usage. For instance, many of the users confirmed to have occasionally visited the library for the purpose of research, represented by about (53.3%) of the respondents, with just a few (25.3%) of the respondents confirmed to have been using library facilities and services frequently basically for studies and research.



**Figure 4.1 The nature of library facilities usage**

**Source:** Filed survey, 2019.

However, few of the respondents disclosed to have never used the library facilities. Notwithstanding the above, most of the library users (42.7%) disclosed that their knowledge has improved greatly through the usage of ICT facilities in the libraries, followed by respondents who perceived slight improvement (40.7%) of their knowledge (See Figure 4.2).



**Figure 4.2 Level of improvement in ICT usage**

**Source:** Field survey, 2019.

Also, 23 respondents representing (15.3%) of the library users studied confirmed that their knowledge level has remained the same, in order words unchanged, with just a few, (1.3%) perceived a slight reduction in ICT usage over the years.

### **Comparative analysis of library’s facilities usage among libraries in the various campuses**

Given that the UDS operates a multiple campus system, this aspect comparatively analyzed the frequency of usage of the various hardware and software facilities in the libraries. The comparison takes into consideration how often library users used software and hardware such as acquisition, cataloging, circulation, serial control, and administration.

In terms of *acquisition* usage among the library, users vary across the five (5) campuses, library users in the Wa campus were found to have used it more often (41.4%) and always (13.8%) compared to the other campuses. Library users in all the other four campuses disclosed to have never used *acquisition* in their libraries, specifically, (54.2%) of the respondents in the medical

schools have never used acquisition, (42.2%) of that library users in Nyankpala, (50%) of the users in Navrongo and (57.1%) in the Graduate school disclosed no knowledge of the usage of the acquisition facility in their library.

In terms of the frequency of *cataloging* usage, the majority of the library users across the University expressed high usage compared to the acquisition facility. However, most of the library users in the Wa campus have utilized it very often (58.6%) and often (20.7%). In the Medical school (33.3%) library users confirmed to have used it often, very often (16.7%) and always (16.7%). In Nyankpala campus, most libraries has equally used cataloging facility often (25%), very often (15.6%) and always (23.4%). In the Navrongo campus, library users also revealed that they use it very often (38.5%), and always (23.4%). Similarly, in the Graduate school, the cataloging hardware is used often (54%) and always (43%) (See Table 4.4).

**Table 4.4 Frequency of the usage of library software/hardware in the library**

Soft/hardware	Campuses	Frequency of usage
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		<i>Never</i>	<i>Rarely</i>	<i>Often</i>	<i>Very often</i>	<i>Always</i>	<i>Total</i>
		<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>
<i>Acquisition</i>	Medical school	13 (54.2)	4 (16.7)	7 (29.2)	0 (0.0)	0 (0.0)	24 (100)
	Wa Campus	12(41.4)	1 (3.4)	12 (41.4)	0 (0.0)	4 (13.8)	29 (100)
	Nyankpala	27 (42.2)	9 (14.1)	17 (26.6)	10 (15.6)	0 (1.6)	64 (100)
	Navrongo	13 (50.0)	7 (26.9)	3 (11.5)	3 (11.5)	0 (0.0)	26 (100)
	Graduate school	4 (57.1)	0 (0.0)	3 (42.9)	0 (0.0)	0 (0.0)	7 (100)
<i>Cataloguing</i>	Medical school	4 (16.7)	4 (16.7)	8 (33.3)	4 (16.7)	4 (16.7)	24 (100)
	Wa Campus	0 (0.0)	3 (10.3)	6 (20.7)	17 (58.6)	3 (10.3)	29 (100)
	Nyankpala	6 (9.4)	17 (26.6)	16 (25.0)	10 (15.6)	15 (23.4)	64 (100)
	Navrongo	0 (0.0)	3 (11.5)	4 (15.4)	10 (38.5)	9 (23.4)	26 (100)
	Graduate school	0 (0.0)	0 (0.0)	4 (54.1)	0 (0.0)	3 (42.9)	7 (100)
<i>Circulation</i>							
	Medical school	3 (12.5)	3 (12.5)	4 (16.7)	7 (29.2)	7 (29.2)	24 (100)
	Wa Campus	3 (10.3)	6 (20.7)	6 (20.7)	10 (34.5)	4 (13.8)	29 (100)
	Nyankpala	10 (15.6)	9 (14.1)	12 (18.8)	8 (12.5)	25 (39.1)	64 (100)
	Navrongo	6 (23.1)	4 (15.4)	7 (26.9)	3 (26.9)	6 (23.1)	26 (100)
	Graduate school	0 (0.0)	4 (57.1)	0 (0.0)	3 (42.9)	0 (0.0)	7 (100)

<i>Serials control</i>	Medical school	11 (45.8)	6 (25.0)	4 (16.7)	0 (0.0)	3 (12.5)	24 (100)
	Wa Campus	11 (37.9)	0 (0.0)	13 (44.8)	4 (13.8)	1 (3.4)	29 (100)
	Nyankpala	20 (31.2)	11 (17.2)	23 (35.9)	1 (1.6)	9 (14.1)	64 (100)
	Navrongo	23 (88.5)	0 (0.0)	0 (0.0)	0 (0.0)	3 (11.5)	26 (100)
	Graduate school	4 (57.1)	3 (42.9)	0 (0.0)	0 (0.0)	0 (0.0)	7 (100)
	Medical school	5 (20.8)	7 (29.2)	0 (0.0)	5 (20.8)	7 (29.2)	24 (100)
	Wa Campus	10 (34.5)	3 (10.3)	13 (44.8)	3 (10.3)	0 (0.0)	29 (100)
<i>Administration</i>	Nyankpala	19 (29.7)	12 (18.8)	18 (28.1)	5 (7.8)	10 (15.6)	64 (100)
	Navrongo	3 (11.5)	17 (65.4)	3 (11.5)	0 (0.0)	3 (11.5)	26 (100)
	Graduate school	0 (0.0)	3 (42.9)	4(57.1)	0 (0.0)	0 (0.0)	7 (100)

**Source:** Field Survey, 2019.

As shown in Table 4.4, the study also found the usage of circulation as prevalent across all the campuses libraries of the University for Development Studies. For instance, in the case of the medical school, about (29.2%) of the library confirmed to have used it very often, always (29.2%), and often (16.7%), with just a few users (25%) in the medical school confirmed to have never or barely used the facility. However, in the Wa campus, the usage of circulation was also observed higher than library users who confirmed no knowledge of it. For instance, (35%) of the library users in the case of Wa, used it very often, followed (21%), users who used it often and (14%) those who used it always. The usage of circulation was also observed as common in Nyankpala, the Navrongo campus library, and the Graduate school library in

Tamale. Overall, administration and serials control usage frequency was found pronounced across all the campuses libraries of the University.

### **Conclusion**

It is worth concluding that library users obtain several benefits in the digital era. Library users easily access information through directly linking to different sources of information online than the use of library facilities outside. The increasing availability of Information Communication Technology facilities and services has facilitated communication between libraries and among library users. Nevertheless, the digital library in the university contributed to easy acquisition, management, storing and distribution of information obtained during the research in the library apart from the provision of current information. At the same time, the usage of ICT facilities in the library promotes all-time access to librarians who are capable of assisting users to realize and find their research materials. This serves as an incentive for the use of library facilities by users. There are also motivating factors like the usage of ICT facilities in the library to promote easier access to materials compared to the usage of similar facilities outside the library or at homes. The provision of Information and Communication Technologies, facilities and services in university libraries must be accompanied by in-services training.

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