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**Comparative Study of Library and Internet Use as a Source of Information by Graduate  
Students of the University for Development Studies, Ghana**

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**Abstract**

Source of academic information is very relevant to graduate students. Basically, academic libraries provide much relevant research materials in both printed and electronic formats to support graduate studies. Higher institutions such as the University for Development Studies have therefore, invested resources in acquiring library infrastructure to facilitate research work. This study sought to analyse graduate students use of library and internet resources for academic activities. Primary data were collected using a questionnaire from 126 graduate students who were selected using a simple random sampling procedure. The data were analysed using descriptive statistics and bivariate probit regression framework. The results indicate that students use both library and internet resources for their academic work. However, the use of internet is more than that of the University's Library resources. Demographic and economic variables were identified as determinants for the use of library and internet resources. It was also discovered that challenges such as unfavourable working hours, unfriendly library staff, lack of essential reference materials and inability to borrow books affect students in library use. Besides, slow data transmission, difficulty in accessing relevant materials and limited skills in accessing information were the challenges associated with internet use. The results have several implications for graduate students' academic work in the University.

**Key Words: University Libraries(y), Library, internet access, academic information, Graduate Studies**

## **1.0 Introduction**

In modern times, access to information is more relevant for academic work in all higher institutions. The role of academic libraries is to provide accessible information resources to the entire academic fraternity (Oak, 2016). Libraries make electronic sources of information available to users because e-learning is giving new dimension in learning and hence affecting education in many ways (Bajpai *et al.* 2016). The revolution in the world of Information and Communication Technology (ICT) has shifted the content of library resources from printed information to online information resources (Israel and Edesire, 2016). Hence, the content of libraries is not restricted to physical formats such as books, magazines or journals. Libraries are now shifting from traditional printed resources to the use of electronic-driven services (Nnadozie and Nwosu, 2016; Okazie, 2016). This makes internet use a necessary condition for effective utilisation of library resources. However, the use of electronic resources does not take the place of printed resources but facilitates it through access to large stock of Library materials (Okazie, 2016).

The academic library serves as an important role in supporting the principal functions of research and scholarship of higher education. Besides the old-fashioned way of providing access to knowledge, libraries also offer affable environment as a meeting place that allows users to complete their assignments, undertake their individual projects or revise their studies. As such, the significance of the academic library in institutions of higher learning is well-established (Tenopir 2009).

According to Mason (2010), the mission of an academic library is to build and maintain a collection that will support and improve the instructional and information needs of the institution. Mason (2010) also agrees with other researchers that academic libraries provide access to all sources of information. The services of the library depend on processed data for users to understand their information need and make corrections on past mistakes and improve on the future. This can be accomplished by library users because they use the library and will be able to determine the effectiveness and efficiency of the services being provided to them by the academic library.

Besides, following technological revolution, libraries do not need to be in a physical space to be able to provide information to its users. The main reason is that ICT is contributing significantly towards the removal of geographical barriers across the globe (Prakash, 2017). Internet is a multipurpose tool with numerous potentials. It enables students to interconnect with other students abroad and thus share each other's ideas, knowledge, experiences, and cultures. It enhances skills and capabilities of students, which assist them in their studies and professional life. Consequently, the teaching and learning processes along with educational programmes and pedagogy of instruction are being reorganized and transformed to meet the expectations of a whole new breed of students entering the Universities.

Information and Communication Technology applications in education sector can greatly enhance the quality of education. The learners, through multifaceted ICT applications, can control the content, time and pace of learning. ICT is also one of the greatest recent advancement in the world and has become a useful instrument that has nurtured the process of making the world a global village. This is a universal fact that the use of internet has a great impact on the student's academic work.

In recent years, the use of the Internet has become very popular in many areas as well as in the educational sector. Accordingly, Internet access in schools has increased greatly over the last 20 years (Berson, 2000). This shows that more students are relying on the Internet for their academic needs than any other areas. In recent years the Internet has become a very effective and popular tool used by students for their academic work as well as for other various purposes including entertainment and communication.

The Internet provides a collaborative environment for sharing as well as to see information on a wide, divergent and variety of subjects. Consequently, its use has become very popular among the student community which is used by them to complement their studies. The availability of the Internet and electronic resources may have a negative effect on the use of an institution's library by students, while socio-economic and demographic characteristics of students can also have a significant impact. It is possible that while some students go to the library to use the

available services, others may not go to the library, perhaps due to the availability of alternatives like personal e-resources and Internet connection at their service.

Franscotti *et al.* (2007) are of the view that, libraries are trying to reinvent themselves to be more appealing to students. They are doing this by fostering literacy information through resources and services to encourage their clients to visit and use the library. In spite of this, studies have shown that attitude of students to the use of library and what characterized their use, reasons for using the library, and information need vary, and where there is low use, there are often pedagogic reasons for it.

In the University for Development Studies (UDS), there has not been any comparative study on graduate students' use of the Library and the Internet as sources of information to enhance their academic work. It is true that the Internet has large amount of information, but the relevance of information to academic work especially with reference to quality and authenticity is guaranteed largely by the one provided by the library and should not be neglected. The information sources from both the Library and the Internet should complement each other to facilitate teaching, learning, research and knowledge dissemination. This study attempts to compare the graduate students of UDS use of both the library and the Internet for academic works

## **2.0 Review of Related Literature**

Empirical studies (e.g Franscotti, *et al.* 2007; Dar *et al.* 2017; Prakash, 2017) have maintained that academic libraries are established to provide resources to facilitate teaching, learning and knowledge dissemination. Today, libraries are equipped with advance technological facilities that facilitate access, and serve the purposes for which they have been established. However, users of the library sometimes resort to the use of alternative sources in accessing academic information instead of the library. This review aimed at discussing the findings of empirical studies on the use of library and internet facilities for academic use.

Boakye (1998) states that university libraries play very important roles in supporting the university's academic and research. Without a library academic and research work of the university will not be successful, because libraries provide services that help in teaching,

learning and research. It is said that the Library is the heart of every university or academic institution. Franscotti *et al.* (2007) establish that the services of the library staff, introduction of better environment and availability of relevant materials. This suggests that library resources should encompass ICT equipment to enable students have a complete set of services

Moreover, the use of information technology in libraries is not only a choice but inevitable in the era of information technology (Dar *et al.* 2017). Libraries are gradually establishing resource sharing to reduce cost and meet the requirements of user demands (Prakash, 2017). This establishes a direct link between libraries and information services with joint influence on knowledge discovery and dissemination in the digital era (Atram, 2017). The use of information technology has created advance contribution in the information technology field which has improved the services of libraries significantly. Besides, the application of ICT in libraries is providing opportunities to users to access and utilize both online resources and other services effectively (Saikia and Gohain, 2013; Atram, 2017; Prakash, 2017).

Modern day libraries have both print and non-print documents with gadgets and equipment used to access information (Kumar, 2016). Some of the equipment include: computers, digitization machines, CD-ROMs, scanners, printers and internet which have contributed immensely to make the transformation of libraries a success (Dar *et al.*, 2017). The recent dramatic change in technology has altered how information is accessed, stored and disseminated. This means libraries are moving in the virtual arena, and making it easier for advances in technology and e-publishing access to information on a local, regional, national and international basis, by overcoming the traditional barriers of time and space.

Despite the potentials associated with the use of academic libraries, yet students have been found to be resorting to traditional sources of internet for their academic work relative to the use of library resources. From the observation of Shehu *et al.* (2015) in Nigeria, students' preference for internet over library was influenced by the relative accessibility of the internet. They added that the internet can be accessed often than the library especially when the library materials are not in electronic formats. They maintain that academic libraries are sometimes less patronized by students because of the availability of alternative sources such as the internet. The alternative

sources, according to Kumar (2016), are the availability of wide range of search engines and online web analytic tools that are assisting students in conducting research. Isiaka and Olaide (2011) presented similar argument in support of empirical studies that suggest what. From the observation of Dhanalakshmi and Nageswara (2016), websites are the most efficient and cheapest way for achieving the entire three academic mission: teaching, research and technology transfer and hence the impact of electronic publications is far larger than that obtained by traditional journals and books in print (on paper) in the libraries. This means that students have considered the traditional sources of internet as a substitute to libraries despite the improvement in technology in library resources.

In Tanzania, Manda (2005) found out that students' neglect of the library and patronage of the internet was based on the weakness associated with library use. The study points out that university library even with electronic resources are less efficient than traditional internet sources. As a result, students were found to have been patronizing the services of internet cafes. The analysis implies that university libraries are not more efficient compared with commercial sources of information such as internet cafes. Challenges such as servers being down, connection not available, and poor electricity that are found with university's libraries are not found with private internet sources.

Azubuiké's (2016) study on post-graduates students' use of electronic information of the university's library reported similar findings detailed above. Pembee (2008) added that the desire for expediency has prompted students to place a premium on information that can easily be found quickly. As a result, students limit their search to electronic resources in the library, choosing format over substance and convenience over accuracy. Pembee (2008) however, concludes that students'(s) reliance on the World Wide Web as a primary research tool has impacted the quality of students' projects and reduce students' familiarity with more traditional print resources and bibliographical databases in their college libraries.

Low utilization of library resources by students prompted many researchers to identify the factors which influence use of university library materials. Peter (2014) pointed out that demographic background of students, resource availability, and user satisfaction significantly

influenced the use of library information systems. Peter( 2014) therefore, explained that both information quality and system quality significantly contribute to increase use of library information system. This implies that low utilization of library information resources is influenced by the extent to which the facilities satisfied the expectation of the user. Gor *et al.* (2016) empirical findings support that male students frequently use online library materials than females. This suggests that student demographic variables also explain use of library and internet materials as put forward by Peter (2014). According to Nnadozie and Nwosu (2016), students' dissatisfaction with access to computers, irregular internet services, and outdated textbooks in libraries explain the switching to traditional internet sources.

Empirical studies have established that some challenges confront the use of libraries and internet among different categories of researchers. University libraries were found to be characterized by poor internet quality such as delays in downloading, large mass of irrelevant information, and lack of knowledge of the system (Adeniran, 2016). Others pointed out that weak and inadequate library equipment such as computers and power outage are the challenges associated with the use of library resources. Such challenges compel students to resort to World Wide Web instead of library resources (Azubuike, 2016; Oduwole & Akpati 2003). Time of opening and closing of universities' libraries also affects students' library use. If library is opened throughout the whole day, teachers will have more opportunities to do their lessons in the library and students can go into the library to work and do whatever they are interested in doing (Franscotti *et al.*, 2007). According to Watts and Ibegbulam (2006), barriers to the use of electronic resources by students include inadequate internet infrastructure and affordable online access. They also reported that absence of in-depth ICT skills and information searching skills among Library staff, and cost of using the cybercafé are barriers to the use of electronic resources. The findings of Lamptey and Corletey (2011) in Ghana and Manda (2005) in Tanzania are not different from what has been reported by the empirical studies.

### **3.0 Objectives of the Study**

The main purpose for the study was to compare graduate students of University for Development Studies use of the library and the Internet as a source of information.

The study was therefore designed

1. To investigate the frequency and purpose of library and Internet use by graduate students,
2. To identify the factors influencing graduate students' use of library and the Internet, and
3. To analyse the challenges graduate students face when using the Internet and the library.

#### **4.0 Methodology**

##### **4.1 The study Area**

The University for Development Studies (UDS) was established by Provisional National Defence Council (PNDC) Law 279 of 1992. The University was mandated to serve the needs of the Four Northern Regions namely: Brong Ahafo, Northern, Upper East and Upper West Regions. In September 1993, the first batch of 39 students was admitted. The University now has four campuses in the three Northern Regions of the country which are located at: Tamale, Nyankpala, Navrongo and Wa respectively. All the campuses have libraries that serve the needs of the academic community.

The Wa Campus of UDS (University for Development Studies) was established on 14th September 2002 with a single Faculty called Faculty of Integrated Development Studies with very few students. This however grew to have two other Faculties which are Faculty of Planning and Land Management (FPLM) and School of Business and Law (SBL). Also, Faculty of Education which is located at Tamale runs some programmes at the Wa Campus. The Wa Campus has two libraries, one at the old campus located at Wa Sombo and the other at the new campus also located at the Bamahu. The Campus serves over 12,000 students reading diploma, undergraduate and postgraduate programmes.

The Wa Campus Library plays a very important role in the delivery of information and services to the University community. It has electronic database and hence provides a wide range of reading materials which include newspapers, journals, magazines, e-resources and books. The internet access is free and can be accessed by any student. The provision of internet in the Library is to pave way for easy access to information and to help students access the e-journals subscribed by the University.

## 4.2 Sampling Design

A survey was conducted on postgraduate students in Wa Campus. A survey has several characteristics and several claimed attractions. Typically, it is used to scan a wide field of issues, populations, programmes etc. in order to measure or describe any generalized features (Cohen *et al.*, 2007). The survey method can be used for descriptive, exploratory, or explanatory research and is best suited for studies that have individual people as the unit of analysis (Bhattacharjee, 2012). The relative strength of the survey method informed the choice of it for this study.

The sample size was estimated using statistical procedure proposed by Miller and Browser (2003). The formula is given as:

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

Where n = sample size; N= sample frame and e = error or significance level. According to Ahuja (2001), an acceptable error level traditionally is up to  $\pm 0.05$  or  $\pm 0.10$  (i.e., 5 or 10 percentage point). In this study, N = 185 graduate students and e = 5% = 0.05. Therefore,

$$n = \frac{185}{1 + 185(0.05^2)} = 126$$

Therefore, 126 graduate students out of which number were selected for investigation into the use of library and internet. The respondents were selected using a simple random sampling procedure.

## 4.3 Data collection

The data required for the study were obtained mainly from primary sources. The primary data were collected using a questionnaire. The questionnaire was designed to gather background information of the respondents, the use of internet and library by graduate students of Wa Campus of UDS', the factors influencing the use of library and internet, and the challenges associated with the use of library and internet by the graduate students were also obtained using the questionnaire.

#### 4.4 Methods of data analysis

The study used descriptive statistics to analyse the frequency, purpose and challenges associated with the use of library and internet among graduate students of Wa Campus of UDS. Besides, the factors influencing students' choice of library and internet use were identified using a regression framework. The decision to use or not to use library and or internet is a choice for the students; influenced by the utility gained from the use of a particular source of information. The appropriate modelling procedure should not be binary, but must instead take into account the interactions and possible simultaneity of the choice decisions. The study used a bivariate probit regression model to identify the determinants of use of internet and library resources.

The probit model takes the form:

$$y_i = \begin{cases} 1 & y_i^* > 0 \\ 0 & \textit{otherwise} \end{cases}$$

$y_i^*$  is the latent variable that cannot be observed while  $y_i$  takes the value of 1 if the event occurs and 0 if otherwise. In this study  $y_1$  is an observation of library use and  $y_2$  is an observation of internet use. The bivariate probit model is specified as:

$$y_i = \begin{cases} y_1^* = X'_1\beta_1 + \mu_i, y_1 = 1 \textit{ if } y_1^* > 0 \textit{ and } 0 \textit{ otherwise} \\ y_2^* = X'_2\beta_2 + \mu_i, y_2 = 1 \textit{ if } y_2^* > 0 \textit{ and } 0 \textit{ otherwise} \end{cases}$$

In the regression framework, X represents a vector of explanatory variables;  $\beta$  represents the regression coefficients and  $\mu$  represents the error terms. The effect of the explanatory variable is measured in terms of marginal effect defined as partial change in the probability of the outcome attributable a change in the variable. The variables definition and measurement is shown in Table 1.

**Table 1: Variables definition and measurement**

Variable	Measurement
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**Dependent Variables**

Use of library	Used =1, Otherwise = 0
Use of internet	Used = 1, Otherwise = 0

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**Independent Variables**

Age	Years
Gender	Male = 1, female = 0
Years of experience in library use	Years
Membership to study group	Membership = 1, Otherwise = 0
Cost of textbooks	Ghana Cedis
Cost of using the library	Ghana Cedis
Cost of using the internet	Ghana Cedis

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**5.0 Results and Discussion**

This section presents the results and discussion related to the objectives of the study. The first section presents the background information of respondents while the other sections present the frequency and purpose of library and internet use. Other sections discuss the factors influencing library and internet use, and the challenges face by graduate students in the use of library and internet.

**5.1 Background of Respondents**

The results of the study provided the description of respondents' background characteristics. The variables captured include gender, age, course year, and degree type. As shown in Table 2, 119 out of the 126 graduate students studied were males and this represents 94.4% of the sample. The remaining 7 respondents representing 5.6% were females. The result shows that majority of the students were males. The students' age distribution was also computed. The results indicate a minimum age of 21 and a maximum age of 43. The mean age was estimated at approximately 32 years. The standard deviation of the age was 4.7 and this is low; implying that many of the ages are closer to the mean.

It was also discovered that the students were from different year groups. As shown in the Table 2 below, 69.0% of the students were first year students, 8.7% were second year students, 20.6%

were in third year while 1.6% were in their fourth year of study. The students were found to have been offering different degree programmes including sandwich which last longer and regular ones. These include Master of Philosophy (MPhil), Master of Science (MSc) and Doctor of Philosophy (PhD). The distribution in Table 2 indicates that 66 students were MPhil students and these represent 52.4% of the sample. Besides, 58 respondents representing 46% were MSc students while 2 students representing 1.6% were PhD students. The distribution suggests that majority of the graduate students were MPhil students.

**Table 2: Background characteristics of respondents**

<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>			
Male	119	94.4			
Female	7	5.6			
<b>Total</b>	<b>126</b>	<b>100</b>			
<b>Course year</b>					
First year	87	69.0			
Second year	11	8.7			
Third year	26	20.6			
Fourth year	2	1.6			
<b>Total</b>	<b>126</b>	<b>100</b>			
<b>Degree type</b>					
MPhil	66	52.4			
MSc	58	46.0			
PhD	2	1.6			
<b>Total</b>	<b>126</b>	<b>100</b>			
<b>Age of respondent</b>	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
	126	21	43	31.83	4.775

Source: Field Survey (2017)

The students have different background characteristics. They also offer different degree programmes that require different levels of research. These will have implications for library and internet use to accomplish their research goals.

## 5.2 Frequency and Purpose of Library and Internet Use

The result of the study revealed library and internet use among the graduate students and the distribution is shown in Table 3. From the table, 79 respondents indicated that they use the library resources of the University for Development Studies and these represent 62.7% of the sample. However, 47 respondents representing 37.3% indicated that they have not been using the library resources. The results revealed that a significant proportion (37.3%) of the graduate students have not been using the library resources of the University.

Some students use traditional internet sources as a substitute or complement to the University Library resources. This study discovered that 112 respondents which represent 88.9% of the sample were users of internet for their academic activities. However, 14 respondents representing 11.1% have not been using the internet. The distribution revealed that majority of the graduate students use internet sources other than the library resources to support their academic activities. Similar finding on student using the internet more than the library was reported by Shehu *et al.* (2015) in Nigeria. In Tanzania, Manda (2005) found out that students' neglect of the library and patronizing the internet was based on the weakness associated with library use. Manda (2005) also pointed out that University Libraries even with electronic resources are less efficient to traditional internet sources. Such factors could account for student use of the internet more than the library in this study.

**Table 3: Use of library and internet for academic work**

<b>Use of library</b>	<b>Frequency</b>	<b>Percent</b>
Yes	79	62.7
No	47	37.3
<b>Total</b>	<b>126</b>	<b>100</b>

  

<b>Use of internet</b>	<b>Frequency</b>	<b>Percent</b>
Yes	112	88.9
No	14	11.1
<b>Total</b>	<b>126</b>	<b>100</b>

Source: Field Survey (2017).

This means that some students will be using library alongside the use of internet while others will be using library alone and internet alone for their academic purpose. Further analysis was done to examine the simultaneity on the use of library and internet resources. The results shown in Table 4 indicate that 9 respondents representing 7.2% use only the library for their academic work. Besides, 52 respondents representing 41.3% use only the traditional internet sources for their academic work. Finally the results indicate that 65 respondents representing 51.6% use both the internet and library for their academic work.

**Table 4: Source of information for academic work**

<b>Source of information</b>	<b>Frequency</b>	<b>Percent</b>
Library only	9	7.2
Internet only	52	41.3
The library and internet	65	51.6
<b>Total</b>	<b>126</b>	<b>100.0</b>

Source: Field Survey (2017)

The results suggest that some students are considering library resources and the traditional internet sources as substitutes since they have decided to resort to only one of these two sources for their academic information. However, some of the students combine the use of the library with traditional search engines outside the library resources for their academic work.

Students visit the library for different academic purposes. The study revealed that common reasons for graduate students' use of the University's Library resources include: search for literature especially for their thesis work, read lecture notes, borrow books, search for academic journals, and use the library internet resources. Table 5 shows the distribution of the purpose of library visit among the respondents.

Moreover, users of traditional internet sources other than the library resources do so some purposes. The results in Table 5 indicate that the main purpose of using the internet among graduate students include searching for research materials, communication with friends, and rereading news. Further distribution in terms of frequency and percent are shown in Table 5.

**Table 5: Purpose of library and internet use**

<b>Purpose of library use</b>	<b>Frequency</b>	<b>Percent</b>
Search for literature	74	58.7
Read lecture notes	25	19.8
Borrow books	29	23.0
Search for academic journals	37	29.4
Use the internet	23	18.3
<b>Purpose of internet use</b>	<b>Frequency</b>	<b>Percent</b>
Research	116	92.1
Communicate with friends	24	19.0
Reading for news	25	19.8

Source: Field Survey (2017)

The results in Table 5 provide varied purposes of students using the library and internet. The purposes are all related to academic work. However, the use of internet to communicate with friends as indicated by 19.0% of the respondents could have different implication for academic work. Nowadays, social media has created an opportunity for many people including students to use the internet for social issues not related to academic activities. This can divert students' attention from their intended academic purposes.

Among users of the University's library also use the internet resources in the library. The specific uses of the internet facilities include electronic mail, World Wide Web (www), video conferencing, internet for file transfer protocol (FTP), internet for Google and Google scholar. The distribution in terms of frequency and percent is shown in Table 6.

**Table 6: Use of internet facilities in the library**

<b>Use of library internet</b>	<b>Frequency</b>	<b>Percent</b>
Use electronic mail (e-mail) in the Library	48	38.1
Use World Wide Web (www) in the Library	53	42.1
Use video conferencing in the library	4	3.2

Use internet for file transfer protocol (FTP) in the Library	4	3.2
Use internet for Google in the Library	46	36.5
Use internet for Google scholar in the Library	18	14.3

Source: Field Survey (2017)

The results in Table 6 revealed that students use electronic mail, World Wide Web (www), and Google more than the other uses as presented in the table. Kumar (2016) maintained that the availability of wide range of search engines and online web analytic tools are assisting students in conducting research. This suggests that the UDS Library has the needed resources required to facilitate students' academic activities. However, the use of the library resources for video conferencing and file transfer protocol (FTP) is not common. This suggests that users of the library resources do not make maximum use of all the resources available. In terms of frequency of library use, the results point out that 21 respondents representing 16.7% of the sample use the library very often, 19 respondents representing 15.1% use it often, 39 respondents representing 31.0% use the University's Library resources occasional. However, 47 respondents representing 37.3% never used the library.

The results also revealed that among the users of the internet, 81 respondents representing 64.3% use it very often, 29 respondents representing 23.0% indicated that they use it often while 2 respondents representing 1.6% use it occasional. However, 14 respondents representing 11.1% never use the internet for academic purpose.

**Table 7: Frequency of library and internet use**

<b>Frequency of library use</b>	<b>Frequency</b>	<b>Percent</b>
Vey often	21	16.7
Often	19	15.1
Occasionally	39	31.0
Never	47	37.3
<b>Total</b>	<b>126</b>	<b>100</b>
<b>Frequency of internet use</b>		
Vey often	81	64.3
Often	29	23.0
	16	

Occasionally	2	1.6
Never	14	11.1
<b>Total</b>	<b>126</b>	<b>100</b>

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Source: Field Survey (2017)

The results on the frequency of library and internet use imply that the internet is more used often than the library. Besides only 1.6% of the sampled respondents use internet occasionally compared with 31% of those who use the library occasionally. This suggests that graduate students in University for Development Studies, Wa-Campus are sensitive to the use of traditional internet sources for their academic work than the use of library resources. Several factors could be responsible for the relatively low utilization of the library or higher use of the internet.

## **5.2 Factors Influencing Library and Internet Use**

This section analyses the factors influencing the use of library and internet among graduate students in the University for Development Studies. The use of internet and library made dependent variables to predict the set of covariates that explain student choice of source of academic information. The explanatory variables used include age, gender, years of experience in using the library, membership of study groups, cost of textbooks, cost of using the library and cost of using the internet.

In the regression model as shown in Table 8, the log likelihood ratio was significant at 1% and this suggests that at least one of the independent variables explains students' choice of sources of academic information. Further statistics from the regression model in Table 8 shows that with the exception of cost of using the library, the rest of the explanatory variables jointly explain choice of using the library, or the internet or both categories.

**Table 8: Factors influencing library and internet use**

Variables	Coefficient		Marginal effect
	Use of library	Use of intent	
Age	0.064(2.31)**	-0.119(-3.62)***	0.02
Gender	-2.166(-3.07)***	-0.874(-1.01)	-0.77
Years of experience in library use	0.022(1.01)	0.071(2.58)**	0.01
Membership to study group	1.496(4.64)***	-0.217(-0.59)	0.46
Cost of textbooks	0.001(2.23)**	0.003(2.07)**	0.00
Cost of using the library	0.393(1.49)	5.645(0.001)	0.14
Cost of using the internet	0.077(1.9)*	-0.016(-0.63)	0.03
_cons	-0.103(-0.1)	5.564(3.74)	
/athrho	14.013(0.02)		
rho	1		
Observation = 126, Log likelihood = -89.39, Wald $\chi^2(14) = 61.05$ , Prob > $\chi^2 = 0.00$			
Likelihood-ratio test of rho = 0: $\chi^2(1) = 16.8415$ Prob > $\chi^2 = 0.0000$			

\*\*\*= significance at 1%, \*\*= Significance at 5%, \*=Significance at 10%, Figures in parenthesis are values

Source: Field Survey (2017)

The results in Table 8 show that age of respondents significantly influence choice of use of library and internet. The coefficient of age is positive and significant at 5% for library uses but was found to be negative and significant for internet use. This means that older students are more likely to use the library resources than younger students. The marginal effect also suggests that additional year of a student will increase the probability of library use by 2.0%. Besides, the negative coefficient of age for internet use implies that as age increases by 1 year, the probability

of internet use reduces by 2.0%. The results suggest that older students are more repetitive to library use while the young are (more sensitive) predisposed to internet use.

Gender of respondent, measured by whether an individual is a male or female was found to be significant for library use but not significant for internet use. Its coefficient was negative for the two categories. This means that male students are less likely to use the library than female students. The marginal effect suggests that being male students reduces the probability of library use by 77.0% than being a female student. The coefficient also suggests inverse relationship for male use of internet but the evidence was not significant. Gor *et al.* (2016) empirical study supports the view that male students frequently use online library materials than females.

Years of experience with library use were found to be a significant determinant of internet use. The coefficient was positive for both categories but only significant at 5% for internet use. This means that people with more experience in library use are using the internet more. Additional year of experience in library use is associated with 1.0% probability of using the internet. The results suggest that people with more experience in using the University Library are switching to the use of traditional internet sources. This possibly explains that such category of respondents were not satisfied with the services of the library and hence are now using the internet more frequently than visiting the library. In the foregoing discussion, the significance of gender and age in the use of library and internet resources confirms the work of Peter (2014) on the role of demographic variables in determining use of library and internet resources.

Besides, membership to a study group was measured by whether a respondent belongs to a study group or otherwise. It was found out that the coefficient of this variable was positive and significant at 1% for the use of library. This means that belonging to a study group increases the probability of library use by 46%. A negative relationship was observed for membership to a study group and internet use but the evidence was not significant. The possible for this observation is that group members can suggest possible ways of using the library resources effectively and hence teach others on how to access information in the library. All members can adopt the habit and resort to the use of library for their academic work.

While cost of library use has no significant influence on the use of library and internet, cost of internet was rather found to have an influence on library use. The coefficient of cost of internet use was positive and significant at 10% for library use. This means that additional cost of internet by GH¢1.0 will increase library use by 3.0%. However, the negative coefficient of cost of internet with internet use (though not significant) suggests that increase in cost will reduce use of internet. The results suggest that the University Library and traditional internet sources are not complementary but are substitutes for students' academic work . This finding justifies the results of Prakash (2017) who reported that libraries are gradually establishing resource sharing to reduce cost and meet the requirements of user demands. The justification is that students are gradually shifting from the use of internet to library as a result of cost effectiveness associated with library use.

### **5.3 Challenges in the Use of Library and Internet**

The study identified some challenges facing the respondents in the use of the University Library and internet. Among the challenges associated with library use include unfavourable working hours, unfriendly library staff, inability to borrow books and unavailability of essential reference materials.

As shown in Table 9, the challenges mostly cited are: unfavourable working hours cited by 51 respondents representing 40.5%, and unavailability of essential reference materials indicated by 57 respondents who represent 45.2%. In a related study, Franscotti *et al.*, (2007) maintain that the time of opening and closing of university libraries also affects students' library use. If library is opened whole day through, teachers will have more opportunities to do their lessons in the library and students can go into the library to work and do whatever they are interested in doing

Besides, associated challenges with the use of internet include: problem with information overload, slow data transmission, difficulty in locating relevant information, and not skilled to access some peer review journals. Details of the distribution of the challenges in terms of frequency and percent are illustrated in Table 9.

From the table below, slow data transmission is the most occurring challenge faced by users of internet.

**Table 9: Challenges in the use of library and internet**

<b>Challenges with library use</b>	<b>Frequency</b>	<b>Percent</b>
Unfavourable working hours	51	40.5
Unfriendly library staff	24	19.0
Inability to borrow books from library	27	21.4
Unavailability of essential reference materials	57	45.2
<b>Challenges with internet use</b>		
Problem of information over load	43	34.1
Slow data transmission	74	58.7
Difficulty in locating relevant information	29	23.0
Not skilled to access peer review journals	20	15.9

Source: Field Survey (2017)

The challenges identified by the respondents in respect of the use of library and internet imply that students either (are very convenient in) use library resources or the traditional internet sources. This means that their academic activities will be limited by access to research materials. Franscotti, *et al.* (2007) established that the services of the library staff, and availability of relevant collection enables students to use the library. In this study, such favourable conditions have not been found in the University's library hence leading to low utilization of the library resources among students. This means that Boakye (1998) position that university libraries play very important roles in supporting the university's academic and research work is limited in the case of graduate students in the University for Development Studies.

## **6.0 Conclusion**

The University for Development Studies has modern library facilities that are being used by students. However, efforts by the University to achieve full utilization of the library resources have not been realised because many graduate students have resorted to the use of traditional internet sources for their academic work.

Students have considered traditional internet resources as substitute to library resources. Rather they serve similar purposes. So both internet and library resources should play a complimentary role in providing relevant information sources to facilitate students' academic work. Demographic and economic variables have been responsible for students switching between the uses of sources of academic information. The results of the study imply that despite the switch between academic information sources, students are not conveniently using both library and internet resources resulting from the challenges associated with both sources.

## **7.0 Recommendations**

Graduate students are advised to resort to the use of the university library resources because they do not contain only printed resources but electronic resources as well. It is a perfect choice because it also contains the internet resources that otherwise could be used elsewhere. Besides, the Librarians on campus can facilitate this by adopting a friendly approach in service provision to students.

Management of the University for Development Studies should put efforts to acquire relevant reference materials for the library. This can be achieved through interaction with lectures and graduate students to suggest the needed resources required in the library.

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