Impact of Electronic Resources and Usage in Academic Libraries in Ghana: Evidence from Koforidua Polytechnic & All Nations University College, Ghana

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Abstract
The study investigates the relationship between impact of electronic resources and its usage in academic libraries in Ghana: evidence from Koforidua Polytechnic & All Nations University College, Ghana. The study was a quantitative approach using questionnaire to gather for data and information. A valid response rate of 58.5% was assumed. SPSS computer software helped to analyze the data in respect of descriptive elements such as correlation, regression among others. All the four contracts (satisfaction level, preferred database, time and frequency, and level of awareness) on impact of electronic resources indicated a significant positive relationship with usage among the users. The study recommended that intensive marketing strategies should be adopted to increase usage of electronic resources in academic institutions in Ghana.
Keywords: Keywords: Database, Electronic Library, Information Literacy, Tertiary Libraries, West Africa

1. Introduction

The twentieth century was shaped by sweeping changes in communication technologies. The emergence and use of information technology is the century's most significant development affecting scholarly communication. The application of computers to information processing has brought several products and services to the scenes. Consequently, the academic community has undergone tremendous changes during these years, assuming new dimensions influenced by technology-driven applications. Libraries have witnessed a great metamorphosis in recent years both in their collection development and in their service structures. Thus Libraries are using technology to improve the management of scholarly information to strengthen and speed access to scholarly information not held locally. Over the last several years a significant transformation has been noticed in collection development policies and practices. Print medium is increasingly giving way to the electronic form of materials (Sharma, 2009).

Ani (2008) states that "the transition from print to electronic medium apart from resulting in a growth of electronic information, has provided users with new tools and applications for information seeking and retrieval. Electronic resources are invaluable research tools that complement the print-based resources in a traditional library setting.

Writing on the advantages of electronic resources, Dadzie (2007) writes that electronic resources are invaluable research tools that complement the print – based resources in a traditional library setting. Their advantages, according to her include: access to information that might be restricted to the user due to geographical location or finances, access to more current information, and provision of extensive links to additional resources related contents. This rapid emergence and development of electronic information technologies therefore makes it possible to envision radically different ways of organizing the collections and services the library has traditionally provided. While libraries approach a crisis point in financing collection development, these new technologies offer possible ways to mitigate costs and revolutionize ways to access information.

1.2 State of the problem

The evolution of the internet has brought about access to electronic resources. This cannot be over-estimated. There seem to be a challenge among the user community of which the study areas are not exception. The information needs of the users as a result of the advent of information technology have change drastically. The issue is whether, the user community is using the appropriate sources? Are the users satisfied? Are they even aware of the change in the existence of electronic resources? There has been series of studies (Ali, 2005; Madhusudhan, 2008; Okello-Obura and Magara, 2008; Dadzie (2007) on the impact of electronic resources in academic libraries in developing countries but none show any empirical relationship between the variables; level of awareness, time and frequency, preferred databases and satisfaction level among users. Therefore this present study seeks to investigate whether there is a relationship between the independent variables (level of awareness, time and frequency, preferred databases and satisfaction level and the dependent variable use of electronic resources) in other to justify the hypothetical statements raised.

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1.3 Objectives of the study

The general objective of the research is to promote electronic resources in academic libraries**.** The specific objectives that the study seeks to achieve are listed below.

- ✓ To find out the level of awareness of electronic resources among the users.
- ✓ To find out the time and frequency of use of electronic resources among the users
- ✓ To find out the kind of electronic resources preferred by users
- ✓ To ascertain if users are satisfied with the electronic resources.

1.4 Significance of the study

The work will be very important to the management, staff, students and any researcher in the academic community. It will create the awareness of the electronic resources for researchers in the study settings. It will help the researchers/community to know the appropriate sources of the electronic resources to use. Apart from the above, it will urge the management of the study areas to vote funds for the establishment of institutional repository. Finally, it will improve the skills and ability in using the electronic resources.

1.5 Review of Related Literature

According to Ray and Day (1998) the importance and wide ranging scope of electronic resources for general communication, information retrieval and instructional delivery to support teaching and research activities in tertiary educational institutions is acknowledged worldwide. The literature also shows that a number of relevant studies have been carried out on the use of electronic resources by lecturers, research scholars and students worldwide. General user opinion towards the use of electronic resources, in particular CD-ROM, has been positive, with students enjoying the use of these resources and finding relatively few problems while using them. The study according to Ray and Day (1998) found out that 83% of students surveyed felt that using this source saved them time, and found it relatively easy to use. Two thirds of those surveyed stated that if the CD-ROM was busy, they would wait for it to become free rather than use the print tool. However, a study of online searching of scientific information in science and technology libraries of Delhi reveals a sizeable number of users (almost 60%) are facing numerous problems while browsing electronic information, such as lack of knowledge about the resources, lack of trained staff and inadequate terminals, (Ali , 2005).

Studies have also been carried out on the use of electronic resources by teachers, students and research scholars of universities and research organizations. Seventy-eight percent (78%) of the respondents feel that the use of the UGC – Infonet e-journals has created high dependency value on their research work and they needed current article alert services and electronic document supply services (Madhusudhan, 2008).

In the context of developing countries, Okello-Obura and Magara (2008) investigated electronic information access and utilization at the East African School of Library and Information Science, Makerere University, Uganda. Out of the 250 targeted students, 190 responded, giving a response rate of 76%. The study revealed that users derive a lot of benefits from electronic resources by gaining access to a wider range of information and improved academic performance as a result of access to quality information.

 In the Ghanaian context, Dadzie (2007) writes that electronic resources are invaluable research tools that complement the print – based resources in a traditional library setting. Their advantages, according to her include: access to information that might be restricted to the user due to geographical location or finances, access to more current information, and provision of extensive links to additional resources related contents.

Chisenga (2004) carried out a survey of the use of ICTs in ten African Public Library Services. The survey found that, although most libraries had internet connectivity, very few were offering web-based information services to their users. The study however, identifies four barriers to the effective provision of electronic resources in those libraries, namely: lack of strategic planning: lack of adequate or reliable funding; lack of use of Internet to provide information services to users and a lack of consistent training for users in new ICT services.
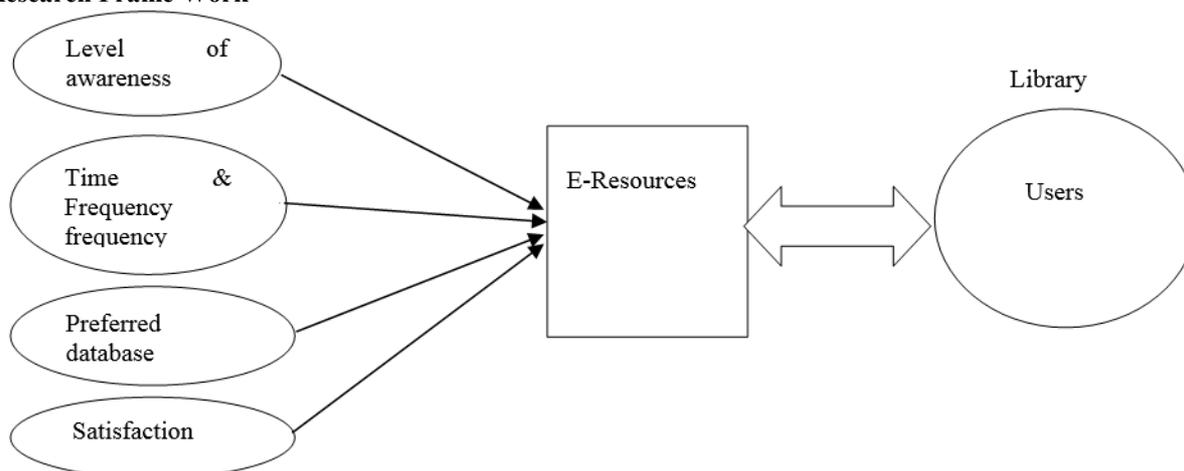
In the Nigerian context, Oduwole and Akpati (2003) investigated the accessibility and retrieval of electronic information at the University of Agriculture Library, Abeokuta, Nigeria. The 525 participants responded out of a survey population of 1,000, giving a response rate of 52.40 percent. The study revealed that electronic information cuts across all members of the University community that it was to a greater extent easy to use and were satisfied with their search outputs. The constraints identified included insufficient number of terminals available for use despite high demand and inadequate electricity supply.

Ojo and Akande (2005) in a survey of 350 respondents examined student's access, usage and awareness of electronic information resources at the University College Hospital (UCH) Ibadan, Nigeria. The study revealed that the level of usage of the electronic information resources is not high. A major problem however identified was lack of information retrieval skills for exploiting electronic resources, thus making the level of usage of resources by medical students very low.

Jagboro (2003) had also emphasized the emerging reliance and attitude of users to electronic resources.

In a study she conducted in some Nigerian Universities, it was found that 45.2% of respondents accessed electronic resources from cybercafés. Though this attitude, according to her is due to the proximity of cybercafés to user facilities.Ajuwon's et al (2003) also carried out a study of uptake of ICTs by health science students at the University College Hospital, Ibadan. This study found that 57% of students sampled could not use a computer, that the use of the database was poor, due to lack of awareness, lack of access to computers, insufficient training and the high cost of provision of services. The related literature reviewed underscores the assumption that, the uptake of electronic resources is highly desirable in that it leads to increased productivity of work, learning, teaching and research.

Research Frame Work

Source: **Authors Construct, 2014**

1.6 Research Hypothesis:
The research objectives are supported by the following research hypothesis.
  ✓ There is a significant relationship between level of awareness and use of electronic resources.
  ✓ There is a significant relationship between time and frequency and use of electronic resources.
  ✓ There is a significant relationship between preferred databases and use of electronic resources.
  ✓ There is a significant relationship between satisfaction level and use of electronic resources.

1.7 Methodology
A questionnaire survey was conducted to collect the information regarding the use of electronic resources, frequency of use of electronic resources, purpose of using electronic resources, frequency of locating desired information, problems faced by users while using electronic resources. A total of 30 questions and 100 choices were designed around seven subjects listed above. Each questions included multiple choices. The people investigated simply ticked inside the brackets. Two hundred and sixty (260) questionnaires were distributed to collect the primary data. One hundred and fifty-two (152) were found useable representing 58.5% of the valid sample size. Questionnaires were distributed randomly to the users at the electronic resources centers, at the Main Libraries and departmental offices, in case of Lecturers. Data collected were analyzed and presented in tabular form.

1.8 Data Analysis
Table 1: Demographic information

Respondents	Frequency(152)	Percentage (%)
Faculty	25	16.5
Administrators	22	14.5
Students	105	69.0
Respondents		
Male	101	65.5
Female	51	34.5

Source: Survey Data (2013)

Table 2 :Correlations

		level of awareness	time and frequency	preferred database	satisfaction level
level of awareness	Pearson Correlation	1	.968**	.377**	.932**
	Sig. (2-tailed)		.000	.007	.000
	N	152	152	152	152
time and frequency	Pearson Correlation	.968**	1	.355*	.931**
	Sig. (2-tailed)	.000		.011	.000
	N	152	152	152	152
preferred database	Pearson Correlation	.377**	.355*	1	.408**
	Sig. (2-tailed)	.007	.011		.003
	N	152	152	152	152
satisfaction level	Pearson Correlation	.932**	.931**	.408**	1
	Sig. (2-tailed)	.000	.000	.003	
	N	152	152	152	152

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2 indicates that all the independent variables   had a significant positive interrelationship at 0.01 and 0.05 level.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.971[a]	.942	.937	.33704

a.   Predictors: (Constant), satisfaction level, preferred database, time and frequency, level of awareness

The results of the multiple regression analysis, as shown in Table 3, R determines the correlation between impact of electronic resources construct and its use. The correlation between the two variables is 0.971 which explains a strong positive significant relationship. Coefficient of determination, R^2, predicts the relationship between the independent variables and dependent is 0.937. This means that 93.0 percent of the total variance in the dependent variable (electronic resources accounted for by the independent variables (satisfaction level, preferred database, time and frequency, and level of awareness). This result affirms that all the four constructs of electronic resources is significant in affecting usage.

Table 4 : Anova[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	83.368	4	20.842	183.478	.000[b]
	Residual	5.112	45	.114		
	Total	88.480	49			

a. Dependent Variable: use of electronic resources

b. Predictors: (Constant), satisfaction level, preferred database, time and frequency, level of awareness

The results of the F-ratio, as shown in Table 4, confirmed that the regression model is significant at $p < 0.001$. It can be accomplished that the regression model predicts use of electronic resources strongly. In other words, the use of electronic resources constructs: (satisfaction level, preferred database, time and frequency, and level of awareness) thus the independent variables have the ability to predict the use of electronic resources thus the dependent variable.

Table 5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.183	.146		-1.255	.000
	level of awareness	.382	.159	.364	2.407	.000
	time and frequency	.468	.147	.480	3.178	.000
	preferred database	.001	.009	.476	4.162	.000
	satisfaction level	.147	.113	.438	4.306	.000

a. Dependent Variable: use of electronic resources

The regression analysis presented in Table 5 reveals that usage determined by the electronic resources constructs of satisfaction level, preferred database, time and frequency, and level of awareness. Level of awareness has a beta value of 0.364. This means that Level of awareness explains 36.4% of electronic resources usage, at a p-value of 0.000. This explains a significant positive association of level of awareness with electronic resources usage. Time and frequency has a beta value of 0.480. This means that time and frequency explains 48.0% of use of electronic resources, at a p-value of 0.000. This indicates a significant positive association of level of awareness with electronic resources usage.

Preferred database has a beta value of 0.476. This means that preferred database explains 47.6 % of usage of electronic resources, at a p-value of 0.000. This shows a significant relationship between of preferred database and usage of electronic resources. Satisfaction level has a beta value of 0.438. This means that satisfaction level explains 43.8 % of electronic resources usage, at a p-value of 0.000. This shows a significant relationship between of satisfaction level and electronic resources usage. The above data shows that all the above hypothesized relationships between impact of electronic resources and its usage are accepted.

Hypothesis	Description	Beta	t-value	Comment
H1	There is a significant relationship between level of awareness and usage of electronic resources in the library.	0.364	2.40	Accepted
H2	There is a significant relationship between preferred database and usage of electronic resources in the library.	0.476	4.16	Accepted
H3	There is a significant relationship between time and frequency and usage of electronic resources in the library.	0.480	4.17	Accepted
H4	There is a significant relationship between satisfaction level and usage of electronic resources in the library. .	0.438	4.30	Accepted

1.9 Discussion

Dadize (2007) posits that electronic resources are invaluable research tools that complement the print-based resources in a traditional library thus supporting the argument that users preferred different kinds of database depending on their needs. Navjyoyi (2007) also finds that speedy publication and availability on the desktop are the key advantages that attract research scholars, in order words electronic resources provide the platform for that.

According to Ray and Day (1998) using electronic resources saved time, and it's relatively easy to use. But users sometimes face numerous problems while browsing electronic information, such as lack of knowledge about the resources, lack of trained staff and inadequate terminals, (Ali 2005) which means creating awareness must critical in all institutions and supported the findings in this present study.

In the view of Oduwole and Akpati (2003) electronic information cuts across all members of the University community which was ascertain by the present study. According to Madhusudhan (2008) studies carried out on the use of electronic resources by teachers, students and research scholars of universities and research organizations indicated that seventy-eight percent (78%) of the respondents feel that the use of the Infonet e-journals has created high dependency value on their research work and need current article alert services and electronic document supply services. This confirms the revelation from the present study.

Ajuwon's et al (2003) study found that 57% of students sampled could not use a computer, that the use of the database was poor, due to lack of awareness, lack of access to computers, insufficient training and the high cost of provision. Hence this meant that there is the urgent need to employ intensive awareness methods because is not far from the findings of the current study.

1.10 Conclusion & Recommendations

The study investigated the relationship between the impact of electronic resources and usage in academic libraries in Ghana: evidence from Koforidua Polytechnic & All Nations University College, Ghana. All the four contracts (satisfaction level, preferred database, time and frequency, and level of awareness) of impact of electronic resources indicated a significant positive relationship with usage among the users. Base on the premise above, all the above hypothesized relationships between impact of electronic resources and usage are accepted.

The study recommended among others that the institutions in question should adopt more dynamic marketing strategies in order to inform and create awareness of the existence of the electronic resources. This must be highlighted on the availability of databases, time and frequency of accessibility of the system. These could include fresh student's orientation, faculty seminars, mailing list to users, circulars, memorandums, selective dissemination of information and word of mouth.

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