

UNIVERSITY OF GHANA
DEPARTMENT OF INFORMATION STUDIES

**ACCESSIBILITY AND UTILIZATION OF SCHOLARLY ELECTRONIC
JOURNALS BY THE ACADEMIC STAFF OF GARDEN CITY UNIVERSITY
COLLEGE, KUMASI AND CHRISTIAN SERVICE UNIVERSITY COLLEGE,**

KUMASI, GHANA



BOAKYE ERNEST

**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN
PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF
MPHIL INFORMATION STUDIES DEGREE**

JULY 2015

DECLARATION

This is to certify that this thesis is the result of research undertaken by Boakye Ernest towards the award of the Master of Philosophy degree in Information Studies at the Department of Information Studies, University of Ghana.

.....
ERNEST BOAKYE
(STUDENT)

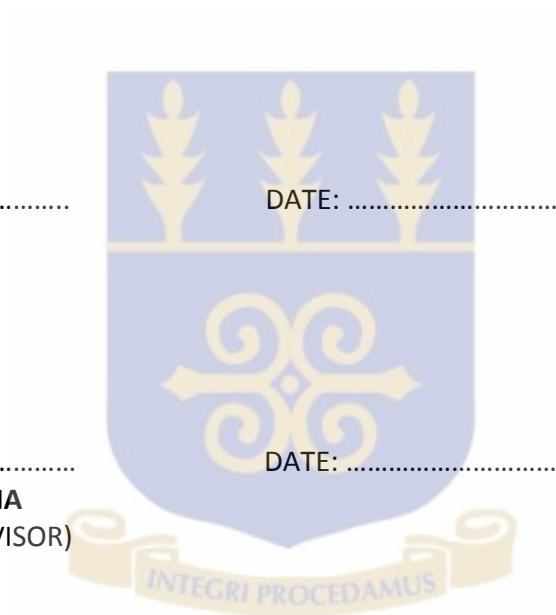
DATE:

.....
PROF. A. A. ALEMNA
(PRINCIPAL SUPERVISOR)

DATE:

.....
DR. E. ANKRAH
(CO-SUPERVISOR)

DATE:



DEDICATION

This work is dedicated to the Almighty God and also to my children Ivana and Andrea (Mpaebo) for their love as well as my wife, Serwaa, for her moral support throughout this study.



ACKNOWLEDGEMENTS

I wish to acknowledge with gratitude the contributions of a number of people who have helped in diverse ways to make this work a reality. I acknowledge with much gratitude my supervisors Prof. A. A. Alemna and Dr. E. Ankrah for their constructive criticisms, useful suggestions and skillful guidance which greatly helped to enrich the study.

I am also grateful to all the lecturers at the Department of Information Studies, University of Ghana, Legon who helped to shape my proposal during my seminar presentation. Special thanks go to Mrs. Maude Kwarteng Amaning (Librarian, Garden City University College) for her encouragement and advice throughout this programme.

My deep appreciation goes to the Management of Garden City University College for their financial support. I say thank you to all the academic staff of Garden City University College and Christian Service University College who answered questionnaire for the study. To everyone whose name I have not mentioned but has helped in diverse ways I say “thank you”.

TABLE OF CONTENTS

DECLARATION.....	i
DEDICATION.....	ii
ACKNOWLEDGEMENT.....	iii
TABLE OF CONTENTS.....	iv
LIST OF TABLES.....	x
LIST OF FIGURES.....	xi
LIST OF ABBREVIATIONS.....	xii
ABSTRACT.....	xiv
CHAPTER ONE.....	1
INTRODUCTION.....	1
1.1 Background to the study.....	1
1.1.1 Garden City University College (GCUC).....	4
1.1.2 Christian Service University College (CSUC).....	6
1.2 Statement of the Problem.....	9
1.3 Purpose of the study.....	11
1.4 Objectives.....	11
1.5 Research Questions.....	12
1.6 Scope and Limitation.....	12
1.7 Theoretical Framework.....	12
1.7.1 The Diffusion of Innovations Theory.....	13
1.8 Significance of the study.....	21
1.9 Organization of Chapters.....	22
REFERENCES.....	23
CHAPTER TWO.....	27

LITERATURE REVIEW.....	27
2.1 Introduction.....	27
2.2 Scholarly Electronic Journals.....	27
2.2.1 Definition and Evolution of Journals.....	28
2.2.2 Electronic Journals.....	28
2.2.3 Introduction of Electronic Journals in Ghana.....	32
2.3 Accessibility of Electronic Journals.....	33
2.4 Utilization of Electronic Journals.....	37
2.5 Access and Use of Electronic Resources in Ghanaian Universities.....	42
2.6 Factors influencing Accessibility and Utilization of Electronic Journals.....	44
2.6.1 Awareness.....	44
2.6.2 Information Searching Skills.....	46
2.6.3 Differences in Disciplines.....	47
2.6.4 Status or Category of User.....	48
2.6.5 Age.....	49
2.6.6 Gender.....	50
2.7 Problems with Access to Electronic Resources.....	50
2.8 Conclusion.....	52
REFERENCES.....	54
CHAPTER THREE.....	68
RESEARCH METHODOLOGY.....	68
3.1 Introduction.....	68
3.2 Research Design.....	68
3.3 Selection of Cases.....	69
3.3.1 Population.....	70

3.3.2 Sample Size.....	71
3.4 Instrumentation.....	72
3.4.1 Questionnaire.....	72
3.5 Pre-Testing.....	74
3.6 Validity and Reliability.....	75
3.7 Mode of Data Collection.....	76
3.8 Data Analysis and Presentation.....	77
3.9 Ethical Consideration.....	77
REFERENCES.....	78
CHAPTER FOUR.....	81
DATA ANALYSIS AND PRESENTATION OF RESULTS.....	81
4.1 Introduction.....	81
4.2 Background Information about Respondents of both University Colleges.....	82
4.2.1 Gender.....	82
4.2.2 Age	83
4.2.3 Discipline of Respondents from both University Colleges.....	84
4.3 Awareness of Scholarly Electronic Journal Services.....	85
4.3.1 Awareness of Scholarly Electronic Journal Services at GCUC and CSUC libraries.....	86
4.3.2 Publicity of Electronic Journals.....	87
4.4 Accessibility of Scholarly Electronic Journals.....	88
4.4.1 Access of Scholarly Electronic Journals.....	88
4.2.2 Frequency of E-Journal Training in GCUC and CSUC.....	90
4.4.3 Level of Proficiency in the Use of Scholarly Electronic Journals.....	91
4.5 Utilization of Scholarly Electronic Journals.....	92

4.5.1 Use of Scholarly Electronic Journals.....	92
4.6 Problems Associated with Accessing and Utilizing Scholarly Electronic Journals.....	93
4.7 Factors that Influence Accessibility and Use of Scholarly Electronic Journals.....	95
4.7.1 Factors that Influence Access and Use of E-journals.....	95
4.7.2 Gender and Use of Scholarly Electronic Journals.....	96
4.7.3 Age and Use of Scholarly Electronic Journals.....	97
4.7.4 Differences in Discipline and Use of Scholarly Electronic Journals.....	99
4.7.5 Educational level and Use.....	100
4.7.6 Awareness and Use of Scholarly Electronic Journals.....	101
4.7.7 Computer Skills and Use of Scholarly Electronic Journals.....	102
4.10 Findings and the Theoretical Framework.....	104
REFERENCES.....	105
CHAPTER FIVE.....	108
DISCUSSION OF MAJOR FINDINGS.....	108
5.1 Introduction.....	108
5.2 Awareness of Scholarly Electronic Journal Services.....	108
5.3 Accessibility of Scholarly Electronic Journals.....	110
5.4 Utilization of Scholarly Electronic Journals.....	112
5.5 Problems Affecting Accessibility and Utilization of Scholarly Electronic Journals.....	113
5.6 Factors that Influence Scholarly Electronic Journals.....	115
5.6.1 Factors that Influence Access and Use of Scholarly Electronic Journals.....	115
5.6.2 Gender and Use of Scholarly Electronic Journals.....	127
5.6.3 Age and Use of Scholarly Electronic Journals.....	116

5.6.4 Differences in Discipline and Use of Scholarly Electronic Journals.....	117
5.6.5 Educational level and Use of Scholarly Electronic Journals.....	118
5.6.6 Awareness and Use of Scholarly Electronic Journals.....	118
5.6.7 Computer Skills and Use of Scholarly Electronic Journals.....	119
5.7 Conclusion.....	119
REFERENCES.....	120
CHAPTER SIX.....	129
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS....	129
6.1 Introduction.....	129
6.2 Summary of Findings.....	129
6.2.1 Awareness of Scholarly Electronic Journals.....	129
6.2.2 Accessibility of Scholarly Electronic Journals.....	129
6.2.3 Utilization of Scholarly Electronic Journals.....	130
6.2.5 Factors influencing Accessibility and Utilization of Scholarly E- Journals.....	131
6.2.5.1 Gender and Usage of Scholarly Electronic Journals.....	131
6.2.5.2 Age and Usage of Scholarly Electronic Journals.....	131
6.2.5.3 Differences in Discipline and Use of Scholarly Electronic Journals.....	131
6.2.5.4 Educational level and Use of Scholarly Electronic Journals.....	132
6.2.5.5 Awareness and Use of Scholarly Electronic Journals.....	132
6.2.5.6 Computer Skills and Use of Scholarly Electronic Journals.....	132
6.3 Conclusion.....	132
6.4 Recommendations.....	133
6.4.1 Awareness Creation.....	133
6.4.2 Training.....	134

6.4.3 Provision of More Relevant Scholarly Electronic Journals.....	136
6.4.4 Infrastructure.....	137
6.5 Areas of Further Research.....	138
BIBLIOGRAPHY.....	139
APPENDIX I.....	164

LIST OF TABLES

Table 3.3.1: Population of Academic Staff from GCUC and CSUC.....	75
Table 4.1: Gender Distribution for GCUC and CSUC.....	87
Table 4.2: Age distribution of Respondents.....	88
Table 4.3: Awareness of Scholarly Electronic Journals	91
Table 4.4: Access of Scholarly Electronic Journals by Respondents.....	94
Table 4.5: Frequency of E-Journal Training.....	95
Table 4.6: Level of Proficiency of Respondents.....	96
Table 4.7: Use of Scholarly Electronic Journals by Respondents.....	98
Table 4.8: Problems in Using Scholarly Electronic Journals.....	99
Table 4.9: Factors that Influence Access and Use of E-Journals.....	
Table 4.10: Relationship between Gender and Use of Scholarly Electronic Journals.....	101
Table 4.11: Relationship between Age and Use of Scholarly Electronic Journals.....	103
Table 4.12: Relationship between Discipline and Use of Scholarly Electronic Journals.....	104
Table 4.13: Relationship between Educational Level and Use.....	106
Table 4.14: Relationship between Awareness and Use.....	107
Table 4.15: Relationship between Computer Skill and Use.....	109

LIST OF FIGURES

Figure 1.7: Summary of the Framework.....	21
Figure 4.1: Discipline of Respondents from GCUC and CSUC.....	90
Figure 4.2: Publicity of Scholarly Electronic Journals from GCUC and CSUC.....	92

LIST OF ABBREVIATIONS

- AGORA: Access to Global Online Research in Agriculture
- CARLIGH: Consortium of Academic and Research Libraries in Ghana
- CD-ROM: Compact Disc Read-Only-Memory
- CSUC: Christian Service University College
- DANIDA: Danish International Development Agency
- DOAJ: Directory of Open Access Journals
- DOI: Digital object identifier
- EBSCO: Elton Bryson Stephens Company
- E-JOURNALS: Scholarly Electronic Journals
- E-RESOURCES: Electronic Resources
- GCUC: Garden City University College
- HINARI: Health Inter-Network Access to Research Initiative
- ICT: Information Communication Technology
- IFLA: International Federation of Library Associations and Institutions
- ILLDD: Inter Library Lending and Document Delivery
- INASP: International Network for the Availability of Scientific Publications
- INSTI: Institute of Technological Information
- IP ADDRESS: Internet Protocol Address
- JSTOR: Journal Storage
- MPHIL: Master of Philosophy Degree
- MSN: Microsoft Network
- OARE: Online Access to Research in the Environment
- PERI: Programme for the Enhancement of Research Information
- PHD: Doctor of Philosophy Degree

TEEAL: The Essential Electronic Agricultural Library

TRA: Tanzania Revenue Authority

UAT: User Acceptance Testing

UK: United Kingdom

URL: Universal Resource Locator

VSAT: Very Small Aperture Transmission

WWW: World Wide Web

ABSTRACT

Developments in the field of information technology have led to a great change in the collection development and service structure of libraries. In recent times, libraries, especially academic libraries, are not only seen with print and non-print resources but also with scholarly electronic journals. Scholarly electronic journals in reality have become one of the most used technological innovations in modern times and also the backbone of many academic institutions.

The main focus of the study was to compare awareness, accessibility and utilization of scholarly electronic journals by the academic staff of Garden City University College (GCUC) and Christian Service University College (CSUC), Kumasi. The study also sought to determine factors affecting electronic journal usage and limitations in accessing and using scholarly electronic journals. The survey method was used and questionnaire was also used as the main instrument. The entire population of one hundred and eighty-seven (187) was used.

The findings revealed low awareness and accessibility levels as well as under-utilization of scholarly electronic journals in both university colleges. No statistically significant relationship was found between gender and usage of scholarly electronic journals at a p-value of 0.354 which is greater than the significant level of 0.05. No statistically significant relationship was found between age and usage of scholarly electronic journals at a p-value of 7.159 which is greater than the significant level of 0.05. No statistically significant relationship was found between other factors including differences in discipline, educational level, computer skills and age at a p-value of 7.159, 5.308, and 0.504 respectively which are all greater than the significant level of 0.05. However, a

statistically significant relationship was found between awareness and usage of electronic journals. The study recommends awareness creation, training, provision of more relevant electronic journals, infrastructure, quality staff and sustenance to ensure maximum access and use of scholarly electronic journals in GCUC and CSUC and also to commensurate the investment made in them.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

In the twenty-first century, electronic resources (e-resources) have become a basic part of the information needs of academic staff and research scholars. The emergence of computers in the 1950s indicated the very beginning or onset of the creation of electronic information resources (Bentil, 2011). According to Meadow, 1988 (as quoted in Bentil, 2011) it was not until the early 1960s that the first database suitable for searching was developed. Electronic resources as defined by Millar (2009) are “information resources that are created, generated, sent, communicated, received, or stored by electronic means”. They come in a number of forms including electronic journals, electronic databases, electronic books, electronic theses, electronic data archives, electronic manuscripts, electronic maps, electronic magazines, electronic newspaper, electronic research Reports, electronic bibliographic database, world wide web (www), search engines, and so on. The rate of growth and variety of electronic resources especially electronic journals has led many to predict the extinction of the print-journal (Egberongbe, 2009).

Electronic journals are serial publications that are available in digital format. E-journals may be distributed in a number of ways, such as on hard-drives and the internet. The ones that come through the internet are made available through the World Wide Web and e-mail. Others come in formats such as Adobe's Personal Digital File (PDF). Some of the electronic journals can be accessed by users for free while others have to be subscribed to (Klemperer, 1999).

Electronic journals may be divided into two types, that is; online and web-based electronic journals. Online electronic journals are ones produced electronically but also have print versions. The whole issue may be distributed electronically to a mail list, or only the table of contents and abstracts may be provided, with specific information pertaining to how to obtain the full electronic text of an article. According to Rao (1998) as quoted in Mgobozi and Ocholla (2002), these are digitized journals. He also stated that, web-based electronic journals are ones that are digital in form. These are produced, processed, edited, stored, reviewed and distributed to subscribers electronically without print versions.

Electronic journals save space, as their storage is more economical and efficient than providing shelf-space for a number of volumes (Bandyopadhyay, 1999). Again, speed of communication is improved by electronic journals as they provide updates on recently published material and allow for smooth transmission of research results and scholarly communication (Rao 1998). Electronic journals assisted by electronic platforms, shared access, usage monitoring and electronic interlibrary loan have become very useful (Hassan, 2010).

Journals made available in electronic form have now become an accepted norm for many academic institutions in the world. It is therefore the responsibility of an academic institution for making these resources available to all its authorized users in-house, on campus and remotely. Today, web based electronic information have become popular tools for academic research. This is because e-journals are up-to-date source for

information and can be accessed from any computer which is connected the internet. These electronic journals provide searching capabilities, timely access, links to related items, reference linking and so on. Some electronic journals are freely accessible while others are not. This is because some of them have to be subscribed to, where huge amounts have to be paid as subscription costs and so makes them unaffordable because one has to pay a fee before it is made available for use (Hassan, 2010).

Electronic journals (E-journals) which have undoubtedly become one of the most used technological innovations form a major part of these electronic resources. Electronic journals, also called e-journals, are publications that are often scholarly and are accessible through the use of computers and distributed to a number of users. Accessibility of e-journals is the degree to which electronic journals are available or obtainable. That is, the ability to obtain or access electronic journals. Also, utilization of e-journals means the act of using e-journals in an effective way by these academic staff to derive the maximum benefit from them. Academic staff in this context refers to the teaching staff and librarians. Academic staff need to access and use e-journals to enable them perform their academic duties effectively and efficiently. They also access and use e-journals to obtain current information and help them to write research proposals as well as research reports. A university is an institution of higher learning providing facilities for teaching and research and authorized to grant academic degrees including bachelor's, master's and doctorate degrees (Oxford Dictionary of English, 2006). University is divided into two broad categories which are public and private. A public university is one mainly funded by the national government through public means. A private university on the other hand

is one that relies on private funding and tuition fees. In this case, the university is funded by private donors, investments and tuition fees and not by tax-payers.

The Garden City University College (GCUC) and Christian Service University College (CSUC) libraries have access to e-journals, some of them for free and others on paid subscription at the disposal of their patrons to access for their research, teaching and learning activities. The e-journals also help the patrons to gain quick access to global information and improve resource sharing

1.1.1 Garden City University College (GCUC)

The vision of the Garden City University College (GCUC) is “to become the premier University in West Africa with distinctive scholarship and competence in the four core areas of education, research, enterprise and community service”. To this end, the university college aims to be a world renowned centre of research and scholarship, learning and teaching, intellectual creativity and innovation and to make contribution to regional, national and international communities. The mission of the University College is to effectively blend information and communication technology, business managerial education and rigorous education in arts and sciences as the engine of development and change in the Ghanaian society.

The Garden City University College started humbly in 2001 as a college with the name, College of Information Technology and Management Systems (CITMAS). CITMAS began formal classes in 2002, mainly focusing on the training of students in short courses

in Information Technology. In 2004, the quality of physical facilities, academic facilities and staff had improved so much that the Board of Trustees decided to convert the institution to a tertiary status. It was officially accredited under the name Garden City University College, Kenyasi-Kumasi by the National Accreditation Board in July 2005 to run degree and diploma programmes.

The University College started in July 2005 with 17 students. By dint of hard work and determination to stand competitive in the tertiary education industry, the College has been able to attract more ambitious students all over the country and beyond resulting in a marked increase of the student population from 17 to 3000 students in 2014. In 2005, the GCUC started to run Bachelor of Science programmes in Accounting with Computing, Economics and Statistics, Finance and Entrepreneurship Development in the School of Business and Bachelor of Science and Diploma in Computer Science in the School of ICT respectively. In 2007, GCUC obtained accreditation to run Bachelor of Science and Diploma programmes in Nursing. In the same year, the National Accreditation Board accredited the University College's Bachelor of Business Administration programme with options in Accounting, Banking and Finance, Human Resource Management, Management, and Marketing. GCUC also obtained accreditation to run Bachelor of Science Midwifery, Medical Laboratory, and Physician Assistantship Studies in 2012. (Source: <http://www.gcuc.edu.gh>).

The GCUC Library, being the heart of the institution, progressively assists teaching, learning and research by making available to the University College community relevant,

timely and current information (both print and electronic) as its core function. Its goal is to stand tall amongst the best and information-rich private academic libraries in Ghana and the continent at large. The total number of books accessioned as at June, 2015 stood at 14,780 volumes. The library has a seating capacity of two hundred (200) which includes an internet-user capacity of fifteen (15). The staff strength of the library stands at eleven (11) which includes one (1) librarian, three (3) para-professionals, six (6) junior library assistants and one (1) administrative secretary. The services offered by the library include reference services, circulation services, printing and photocopying services, inter-library loan and tutorial services. (Source: <http://www.gcuc.edu.gh>).

As a member of the Consortium of Academic and Research Libraries in Ghana (CARLIGH), the GCUC library provides users with access to over thirty e-journal databases. The ICT centre of the University College has a seating capacity of 60 networked computers. The library provides wireless connectivity and an electronic resource librarian is in-charge of the electronic resource services provided by the library. All these are to ensure regular access to electronic resources, most importantly electronic journals by the university community. (Source: <http://www.gcuc.edu.gh>).

1.1.2 Christian Service University College (CSUC)

Christian Service University College aims to be a first class Evangelical Christian University that promotes knowledge about Christ through the training of men and women with moral uprightness, academic excellence and passion to serve and transform society. The Christian Service University College is an Academic Centre of Excellence for

teaching, research and service in Theology, Applied Science and Humanities in an evangelical and sound environment.

The College began as a merger of two visions in January 1974. A group of Ghanaian Christians had a vision of an interdenominational, evangelical institution of a high academic standard, which would train men and women for all types of Christian Ministry. The second group comprised of expatriate missionaries who had a vision of an institution to train workers from the well-established church in southern Ghana for a thrust into northern Ghana and neighbouring countries where the church was relatively small. Evangelical Christianity in Ghana in the late 1960's and 1970's was characterized, among other things, by intimate interaction and collaboration and blurring of denominational, mission and group distinctions. The Worldwide Evangelization for Christ (WEC), which was one of the missionary groups in the second group of missionaries, had acquired property in Kumasi on which they had built four dwelling houses and a radio studio with plans to construct a large building to serve as the beginning of a training college.

In October 1974, the first residential classes started with four students and the College grew from strength to strength and has now become an Evangelical Christian University College. The College is incorporated under the Trustees Act and therefore the property and effects of the College are vested in the Trustees. From the very beginning, the College has been governed by evangelical men and women who had been appointed in their own right as people committed to the Lord and the objectives of the college as well

as having the needed expertise and not as representatives of any church, mission group or organization. Apart from students' fees, the bulk of the finance of the College in the early stages was contributed by the Friends of the College. (Source: <http://www.csuc.edu.gh>).

As the heart of the institution, the CSUC library is duty bound to contribute towards the attainment of the goals, mission, and vision of the mother institution. The library fulfills this by providing information services to meet teaching, learning, outreach, and research activities of the University College Community. The library has a total collection of 15,000 books with a variety of international and local magazines, newspapers, and research publications. It has a seating capacity of 136 with 16 sixteen computers connected to the internet. The staff strength stands at six (6) out of which one (1) is a librarian, three (3) para-professionals, and two (2) junior library assistants. The CSUC library offers services which include lending, reference, photocopying and electronic resources services. (Source: <http://www.csuc.edu.gh>).

The CSUC provides access to the Directory of Open Access Journals (DOAJ), and Google Scholar for its clientele as it is not a member of the Consortium of Academic and Research Libraries in Ghana (CARLIGH). This means that CSUC library does not subscribe to any paid for journal database for its users and therefore has access to limited number of electronic journals compared to members of CARLIGH. As the above listed e-journal databases are free, it is very likely that users might not be able to download full-text articles from journals that are not included in these databases. (Source: <http://www.csuc.edu.gh>).

1.2 Statement of the problem

Books, traditionally, have been the main sources of information for all information seekers. However, nowadays books have been supplemented by sources such as e-journals and other electronic sources. Electronic journals have become a great force to reckon with as they contain the most current and updated information. Lecturers and other academic staff of GCUC and CSUC therefore have access to them for relevant information.

Electronic resources as invaluable research tools come in to complement print-based ones in any traditional library and they enable access to information which otherwise would not have been available because of geographical or financial restrictions. They also make available to users current information as these are mostly updated frequently. Through various search strategies, e-resources provide a lot of links to explore additional resources. Furthermore, users can access electronic resources from many locations including the library, internet café, offices and even from the comfort of their homes. These are some of the reasons why libraries in Ghana, especially academic libraries, are being challenged to provide access to electronic resources to support teaching, research and learning (Dadzie, 2005).

A number of information sources, including journals, books and patents become easily accessible and are available in electronic form through the online databases. Universities invest in e-resources in order that Faculty members have access to databases of publishers such as Elsevier, Wiley, and Springer and of vendors such as EBSCO and

ProQuest. What should be realized is that, although electronic information sources are collected on a large scale by academic libraries; they are not used in the same scale (Weiner, 2003).

As library budgets are falling, there is the need to maximize the use of available electronic resources to justify the financial investment involved in the maintenance of such systems in universities and academic libraries. Scholarly electronic journals are used in research and academic activities for quick access and convenience in retrieval of current information (Hassan, 2010).

However, preliminary investigations conducted by the researcher indicated that the available e-journals are not efficiently utilized by the academic staff of GCUC and CSUC. The initial interaction with some of the faculty in both university colleges revealed some frustrations they go through in accessing and using the e-journals. The frustrations include non-availability of required information, inadequate infrastructure hindering accessibility of e-journals, network problems and lack of training in the use of e-resources. Some of the academic staff intimated that, the use of e-journals is complex and burdensome. This could be the result of lack of searching skills or information retrieval skills. Others were completely unaware of the e-journals which revealed the problem of unawareness. These factors therefore inhibit accessibility and the effective utilization of e-journals by academic staff of GCUC and CSUC. The end result is, at best, to avoid the use of electronic journals. The effect is that the university colleges could

have been wasting scarce financial resources in acquiring these under-used and non-used electronic journals.

It is against this backdrop that the researcher decided to investigate into the accessibility and utilization of scholarly e-journals by the academic staff of GCUC and CSUC to determine the underlying factors. Therefore, the underlying factors for the under-utilization and inaccessibility of e-journals constitute the rationale for this study.

1.3 Purpose of the Study

The purpose of this study was to compare accessibility and utilization of scholarly electronic journals by the academic staff of Garden City University College and Christian Service University College and also to determine problems and factors that influence access and use of e-journals in the two university colleges. A comparison could be useful to determine utilisation and accessibility in GCUC and CSUC.

1.4 Objectives

This research therefore sought:

1. To compare the level of awareness of academic staff of both GCUC and CSUC concerning e-journals.
2. To compare the level of accessibility of electronic journals in both GCUC and CSUC.
3. To compare the extent of utilization of electronic journals in both GCUC and CSUC.
4. To determine factors influencing the accessibility and utilization of electronic journals by the academic staff of both university colleges.

5. To establish the problems academic staff of both university colleges face in accessing and utilizing electronic journals.

1.5 Research Questions

1. What is the level of awareness of e-journals by the academic staff of GCUC compared with the academic staff of CSUC concerning e-journals?
2. What is the level of accessibility of e-journals by the academic of GCUC compared to the academic staff of CSUC?
3. What is the extent of utilization of e-journals by the academic of GCUC compared to the academic staff of CSUC?
4. What are the factors that influence the accessibility and utilization of e-journals by the academic staff of GCUC and CSUC?
5. What problems do academic staff of GCUC and CSUC face in accessing and utilizing e-journals?

1.6 Scope and Limitation of the Study

The study is limited to academic staff of GCUC and CSUC. Also, there are several electronic resources available on but this study is limited to only scholarly electronic journals provided by the libraries of the two universities used in this research.

1.7 Theoretical Framework

The Oxford Dictionary of English (2006) defines a theory as a supposition or a system of ideas intended to explain something, especially one based on general principles

independent of the thing to be explained. It helps to explain or predict phenomena that occur in the world. According to Creswell (2003), the theory for a study is a guide for the entire study. It is an organising model for the research questions and also for the data collection procedure. That is to say, a theory guides research. A lot of theories have been propounded for the use of information technology. These include Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB), User Acceptance Theory (UAT), Technology Acceptance Model (TAM) and The Diffusion of Innovations (DOI) Theory.

1.7.1 The Diffusion of Innovations Theory

With the introduction of information systems in organizations in the 1970s, technology acceptance by users received reasonably extensive attention (Rogers, 1995; Swanson, 1988). Many researchers found predicting system use as an interesting area of research, as a result of the growing technology needs as well as the increasing failures of system adoption in institutions and organisations since the 1970s. The abundant flow of research on information systems use according to Lee et al., (2004), takes a variety of theoretical perspectives. Practitioners and researchers spent considerable research effort to establish the factors that affect beliefs and attitudes of users with regard to information systems (IS) acceptance decision and the factors that contribute to user resistance (Lucas et al., 1990 as quoted in Bentil, 2010). Technology Acceptance Model and Diffusion of Innovations Theory were some of the theories used in such researches.

The Diffusion of Innovations Theory, propounded by Rogers (2003) is a very useful framework for the study of innovations. The theory has been applied to many fields of

research including education, sociology, public health, communication, anthropology and industrial engineering (Rogers 1995). Many researchers have used this theory to explain information use (Nazari, F. 2014; Nazari, Khosravi, & Babalhavaeji 2013; Janardhanam, Sinha, & Babu 2011; Lorenzo 2010; Al Ghaith, Sanzogni & Sandhu 2010; Hayati, & Jowkar 2008).

According to Rogers (2003), Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication concerned with the spread of what can be seen as a new development in a particular field. Technically, the idea which is perceived as new by an individual is referred to as an innovation. This term can be an idea, practice or object that is perceived as new by an individual or other unit for adoption. By adoption, our attention dwells on the acceptance and utilization of the innovation. For instance, a particular innovative idea is said to have been adopted by a social system when that innovation has been accepted and is being used.

Since time immemorial, societies have adopted new trends through the process of diffusion. Examples can be cited from many fields of life, including education, technology and agriculture, where over time, ideas, concepts and products are improved for individual and social benefits. However, whereas some innovations are readily accepted by a social system, others face rejection. The characteristics of an innovation as perceived by the members of a social system determine its rate of adoption.

According to Rogers (2003), for innovation to spread and be adopted, it should show characteristics such as relative advantage, complexity and compatibility to those people within the social system. Relative advantage is the degree to which an innovation is perceived as better than the idea it supersedes. The degree of the relative advantage may be measured in economic terms, but social prestige, convenience, and satisfaction are also important factors. It does not matter so much if an innovation has a great deal of objective advantage. What does matter is whether an individual perceives the innovation as advantageous. The greater the perceived relative advantage of an innovation, the more rapid its rate of adoption will be.

Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential users. An idea that is incompatible with the values and norms of a social system will not be used as rapidly as an innovation that is compatible. The utilization of an incompatible innovation often requires the prior adoption of a new value system, which is a relatively slow process.

Complexity concerns the degree to which an innovation is perceived as difficult to understand and use. Some innovations are readily understood by most members of a social system; others are more complicated and will be adopted more slowly. New ideas that are simpler to understand are adopted more rapidly than innovations that require the adopter to develop new skills and understandings.

The theory also considers the role of time in the adoption of an innovation because the location of spread of a new idea may affect its process or rate of eventual adoption by a particular social system. Apart from the characteristics that are associated with the innovation, other means of enhancing access and utilization of the innovation come through communication channels. One could define communication as the process by which participants create and share information with one another in order to reach a mutual understanding. Even though mass media has proved to be an effective way of communicating innovations, the influence exerted by peers cannot be under-rated. Most individuals evaluate an innovation, not on the basis of scientific research by experts, but through the subjective evaluations of near-peers who have used the innovation.

In the DOI theory, the processes of communication consist of knowledge, persuasion, decision, implementation and confirmation. The first three items will be briefly considered for the purpose of this research. Knowledge makes the acceptance and utilization of an innovation possible because the adopter becomes aware of it and conceives some idea of how it functions. The process of persuasion aids a person to form a favourable or unfavourable attitude toward the innovation. The decision process is also very important as it engages a person in activities that lead to a choice to adopt or reject the innovation. When a person puts an innovation to use, then the process of implementation has taken place.

A social system is defined as a set of interrelated units that are engaged in joint problem-solving to accomplish a common goal. Members of a social system in the DOI are

classified as innovators, early adopters, early majority, late majority and laggards. Innovators are usually the first in the system to adopt. This interest in new ideas leads them out of a local circle of peer networks and into more cosmopolite social relationship. Thus, the innovator plays a gate keeping role in the flow of new ideas into a system. Early adopters are individuals who adopt an innovation. Early adopters are a more integrated part of the local system than are innovators. Whereas innovators are cosmopolites, early adopters are localities. This adopter category, more than any other, has the greatest degree of opinion leadership in most systems.

Potential adopters look to early adopters for advice and information about the innovation. The adopter category is generally sought by change agents as a local missionary for speeding the difficult process. Because early adopters are not too far ahead of the average individual in innovativeness, they serve as a role-model for many other members of a social system. The early adopter is respected by his or her peers, and is the embodiment of successful, discrete use of new ideas. The early adopter knows that to continue to earn this esteem of colleagues and to maintain a central position in the communication networks of the system; he or she must make judicious innovation decisions. The early adopter decreases uncertainty about a new idea by adopting it, and then conveying a subjective evaluation of the innovation to near-peers through interpersonal networks.

The early majority adopt new ideas just before the average member of a system. They interact frequently with their peers, but seldom hold position of opinion leadership in a system. The early majority's unique position between the very early and the relatively

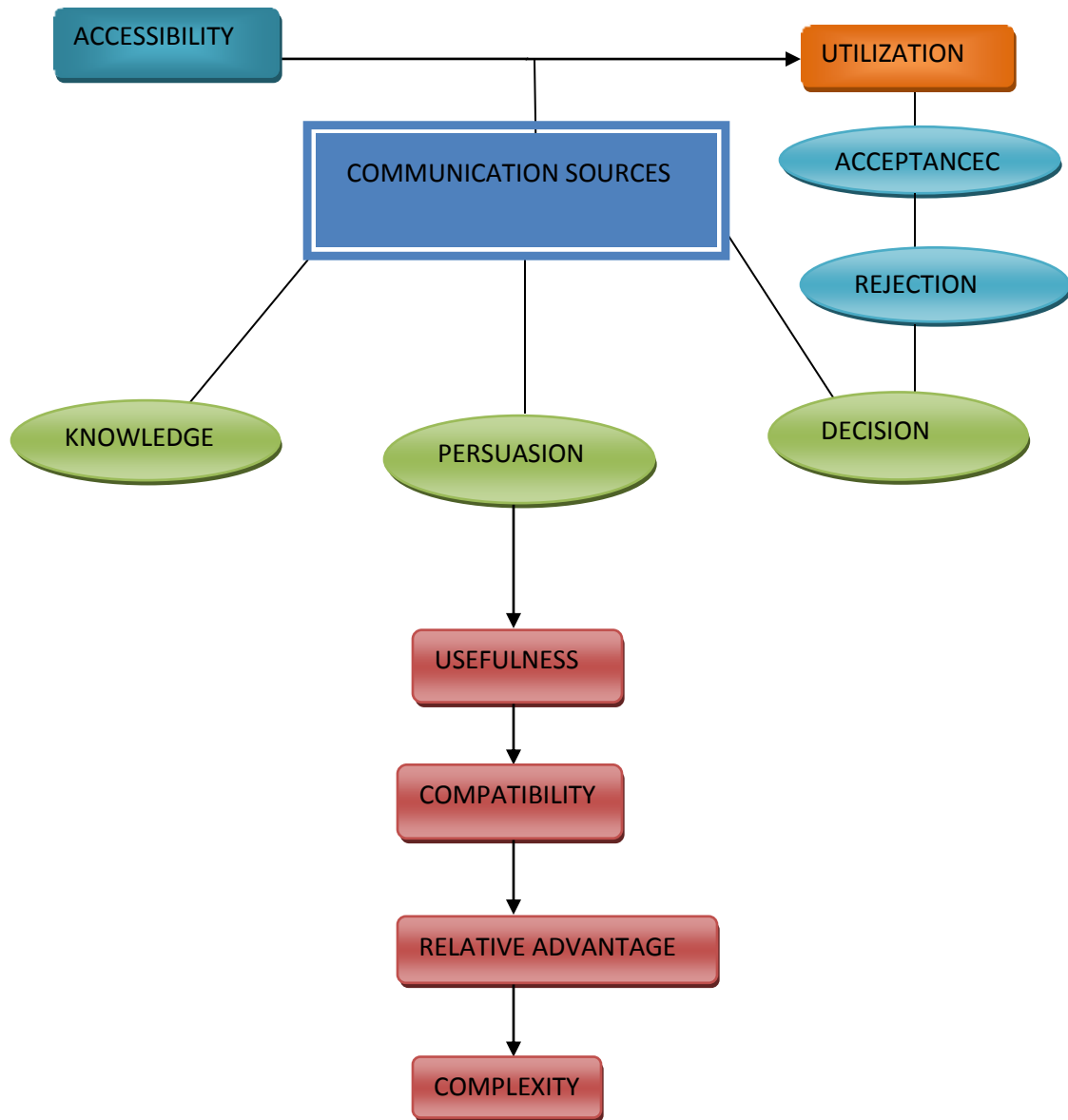
late to adopt makes them an important link in the diffusion process. They provide interconnectedness in the system's interpersonal networks. The early majority may be deliberate for some time before completely adopting a new idea.

Late majority is the next to adopt in the innovation. The late majority adopt new ideas just after the average member of a system. Like the early majority the late majority make up one-third of the members of a system. Adoption may be the result of increasing network pressures from peers. Innovations are approached with a sceptical and cautious air, and the late majority do not adopt until most others in their system have done so. The weight of system norms must definitely favour an innovation before the late majority are convinced. The pressure of peers is necessary to motivate adoption. Their relatively scarce resources mean that most of the uncertainty about a new idea must be removed before the late majority feel that it is safe to adopt.

Laggards are the last to adopt an innovation. They possess almost no opinion leadership. Laggards are the most localised in their outlook of all adopter categories. Many are near isolates in the social networks of their system. The point of reference for the laggards is the past. Decisions are often made in terms of what has been done previously. Laggards tend to be suspicious of innovations and change agents. Resistance to innovations on the part of laggards may be entirely rational from the laggard's view point, as their resources are limited and they must be certain that a new idea will not fail before they can adopt.

Undoubtedly, electronic journals have become one of the most used technological innovations of the century. In the context of this study, it is an acceptable fact that the emergence of electronic journals has made academics to be knowledgeable in searching information and communicating with each other worldwide. Even though electronic journals are considered very efficient and innovative in the acquisition and impartation of knowledge, their accessibility and utilization by members of various academic institutions appear bleak. The study thrives on the assumption that academic staff of the GCUC and CSUC, which constitute the social system, belong to different adopter categories regarding e-journal as an innovation in information access.

Recognising that e-journals have been adopted as part of technological innovation within the social context, the DOI theory was applied to investigate factors relating to accessibility of e-journals among academic staff of GCUC and CSUC as well as the acceptance or rejection levels of its utilization in the social system. Although online journal databases are common among faculty members of universities, the level of their willingness to accept and use other forms of information is not known. The conceptual framework, based on Rogers' DOI (2003), will consider how communication sources of knowledge, persuasion and decision underlie the access and utilization of e-journals in the selected institutions in its adoption stage which is also in line with the objectives of the study. The following is a summary of the framework:

FIGURE 1.7: Summary of the Framework

Source: Hassan, 2010

1.8 Significance of the Study

In the view of Creswell (2009), the significance of a study conveys the importance of the problem for different groups that may profit from reading and using the study. It might also include why the study adds to scholarly research and literature in the field, about how the study helps improve practice and why the study will improve policy.

This research has brought to light the importance of accessing and utilizing e-journals. Also, it would be useful to information professionals in the field as it has revealed issues that bother on the adoption of electronic journals in private universities from which librarians in Ghana and the rest of the world can learn and provide better services. The results of the study provides policy and decision makers with a considerable knowledge on contemporary issues of using electronic journals so that appropriate measures and decisions can be taken to ensure maximum and efficient use. The findings would enable academics to effectively access and use a number of relevant documents efficiently to meet their information needs.

The study would be of benefit to lecturers and other academic staff by helping them to know a number of scholarly electronic journals available in their areas of specialisation and the ones that would be of relevance to their research needs. Lastly, the study has contributed to the existing body of knowledge in the area of access and use of electronic journals. This research would be useful to researchers and scholars as it adds to the scholarly research and literature on electronic journals access and use as well as creating awareness of the importance of the use of electronic journals.

1.9 Organization of Chapters

The study is captured in six chapters as follows:

Chapter one covers the introduction to the work. It contains the background to the study, brief history of the study settings, statement of the problem, purpose of the study, objectives of the study, research questions, scope and limitations of the study, theoretical framework for the study, and significance of the study.

Chapter two is made up of literature review which consists of World view, African view and Ghanaian view of the topic together with the review of relevant literature on specific areas relating to the topic.

Chapter three also contains the methodology adopted for the study, made up of research design, selection of the cases, population, sampling and sample size, instrumentation, mode of data collection, analysis and presentation.

Chapter four deals with presentation of data and analysis.

Chapter five involves discussion of the major findings.

Chapter six is the final chapter and contains summary of findings, conclusion and recommendations.

REFERENCES

- Al Ghaith, W. A., Sanzogni, L., & Sandhu, K. S. (2010). Factors influencing the adoption and usage of on line services in Saudi Arabia. *The Electronic Journal on Information Systems in Developing Countries*, 40(1), 1-32.
- Al-Gahtani, S. S. (2003). Computer technology adoption in Saudi Arabia: Correlates of perceived innovation attributing. *Information Technology for Development*, 10(1), 57-69.
- Bandyopadhyay, A. (1999). Accessing SCI-tech literature: Commercial document delivery services and online full-text databases. *Collection Building*, 18(1).
- Bentil, W. (2011). *The Use of Electronic Resources in Ghanaian Universities: a comparative study of the University of Cape Coast and the Central University College*. (Unpublished MPhil thesis). Department of Information Studies, University of Ghana, Legon.
- Christian Service University College. (2013). *Annual Report 2013*. Retrieved 8/10/14 from: www.csuc.edu.gh.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative and mixed method approach*. (3rded). Thousand Oaks, CA: SAGE.
- Egberongbe, H. S. (2009). *The use of electronic resources in Nigerian Universities*. (Unpublished M.Phil. thesis). Department of Information Studies, University of Ghana, Legon.
- Garden City University College. (2014). *President's Report 2014*. Retrieved 8/10/14 from: <http://www.gcuc.edu.gh>.

- Hassan, A. (2010). *Accessibility and utilisation of scholarly electronic journals by members of the academic of Kwame Nkrumah University of Science and Technology*. (Unpublished M. A. Dissertation). Department of Information Studies, University of Ghana, Legon.
- Hayati, Z., & Jowkar, T. (2008). Adoption of electronic reference materials in academic libraries of Iran. *The International Information & Library Review*. 40(1),52-63.
- Janardhanam, K., Sinha, R., & Babu, V.S. (2011). Adoption of new technology in B-School: An analytical study of Bangalore. Paper presented at *International Conference of the Association for Technology and Business Management* (CTBM-11), March 2011, Dubai: SZABIST. Retrieved on 15/09/14 from: <http://www.trikal.org/ictbm11/ProgrammeBulletin/Programme Bulletin.pdf>
- Klemperer, K. (1999). *Electronic journals: a selected resource guide*. Retrieved on 12/10/14, from: <http://www.harrassowitz.de/ms/ejresguide.html>.
- Lee, Y., Kozar, K. A., & Larsen, K. R. T. (2004). The Technology Acceptance Model: Past, present, and future. *Communication of the Association for Information Systems*. 12(50), 753-780.
- Li, Y. (2004). *Faculty perceptions about attributes and barriers impacting diffusion Of Web-Based Distance Education (WBDE) at the China Agricultural University*. (Unpublished PhD Dissertation).University of Texas A & M University, USA.
- Lorenzo, T. (2010). Leadership and adoption of instructional technology in a military medical learning environment: A Case Study. *Journal of American Society for Information Science*, 48(6), 508-518.

- Lucas, H. C., Ginzber, M. J., & Schultz, R. L. (1990). *Information systems implementation: Testing a structural model*. Norwood, NJ: Ablex Publishing.
- Meadow, C. T. (1988). Back to future: Making and interpreting the database industry timeline. *Database*, 11(5), 23-40.
- Mgobozi, M. N., & Ocholla, D. N. (2002). The use of electronic journals for the dissemination of scholarly information by the University of Natal and the University of Zululand. *South African Journal of Libraries & Information Science*, 68(2).
- Millar, L. (Ed.) (2009). *Understanding the context of electronic records management: Module 1*. London: International Records Management Trust.
- Nazari, F. (2014). Attributes of Diffusion Theory as effective predictors on university faculty members' adoption of online database in Iran. *Swiss Journal of Research in Business and Social Sciences*, 1(1), 38-48.
- Nazari, F., Khosravi, F., & Babalhavaeji, F. (2013). Applying Rogers' Diffusion of Innovation theory to the acceptance of online databases at University Zone of Iran. *Malaysian Journal of Library & Information Science*, 18(3), 25-38.
- Neuman, W. L. (2006). *Social research methods: Qualitative and quantitative approaches*, (6thed.). Boston: Pearson Education.
- Neuman, W. L. (2007). *Basics of social research: Qualitative and quantitative approaches*, (2nded.). Boston: Pearson Education.
- Rao, S. S. (1998). Trends in publishing and delivery of electronic information. *New Library World*, 99(1145). Retrieved on 15/10/14 from: <http://www.emeraldinsight.com>.

- Rogers, E. M. (1995). *Diffusion of innovations*, (4thed.). New York: The Free Press.
- Rogers, E. M. (2003). *Diffusion of innovations*, (5thed.). New York: The Free Press.
- Rogers, S. A. (2001). Electronic journal usage at Ohio State University. *College & Research Libraries*, 62(1), 25-34.
- Soanes, C., & Stevenson, A. (Eds) (2006). *Oxford Dictionary of English*, (2nd ed. rev.) Oxford: Oxford University Press.
- Swanson, E. B. (1988). *Information system implementation: Bridging the gap between design and utilization*. Homewood, IL: Irwin.
- Usluel, Y.K., Aşkar, P., & Bas, T. (2008). A structural equation model for ICT usage in higher education. *Educational Technology & Society*, 11(2), 262-273.
- Weiner, S. G. (2003). Resistance to change in libraries: Application of communication theories. *Libraries and Academy*, 3(1), 69-78.
- Williamson, K., Wright, S., Burstein, F., & Schauder, D. (2003). Adoption of online databases in public libraries: An Australian case study. *LIBRES: Library and Information Science Research International Journal*, 13(2), 1-8.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature review helps researchers to limit their scope of inquiry and convey the importance of studying a topic to readers. A literature review aims to review the critical points of current knowledge on a particular topic (Hassan, 2010). It is also aimed at deriving a conceptual understanding from previous studies on the subject matter (Egberongbe, 2009). The study adopted the integrative form of literature review where reviews are mainly summaries of past research (Creswell, 2003).

2.2 Scholarly Electronic Journals

Recent technological developments especially in the area of information and communication technology have led to a change in each and every aspect of the world scenario. It cuts across the publication industry leading to a corresponding change in the medium of scientific communication. Scholarly publications have changed from print format to electronic format nowadays. Modern libraries make available electronic access to many resources which include full-text articles, indexes and complete journals. If the contents of journals are mainly academic in nature, then they are identified as scholarly journals and the electronic versions are also known as scholarly electronic journals (Kumar & Glover, 2007). The major sub-divisions under electronic journals reviewed include accessibility of e-journals, utilization of e-journals, access and use of e-journals in Ghanaian universities, factors that influence accessibility and utilization of e-journals and problems with access and use of e-journals.

2.2.1 Evolution of Journals

A journal is the primary medium of scholarly communication. According to Webster's Third International Dictionary of English (2006), a journal is defined as "a periodical publication, especially dealing with matters of current interest, often of official or semi-official publication of special groups (Kumar & Glover, 2007). The first scholarly journal being *Journal des Scavans* was published in 1665 with a long history. The contents of journals are original research. The term "journal" is mostly used for periodical, especially more academic or learned periodicals. "It is a publication issued in successive parts and intended to be continued indefinitely". Basically, it is a periodical which contains a collection of articles by different authors often on a specific subject. Journals are also known as periodicals or serials. They are often published by professional associations, society, foundation, commercial publishers or institute. A refereed journal is one with articles that are evaluated by editorial board of a journal and accepted for publication. A refereed journal is also known as peer-reviewed journal.

2.2.2 Electronic Journals

"Electronic journal is any journal which is available in electronic or computerized form on the internet, hard-drives or on CD-ROM. Electronic journals have been named by various terms such as virtual journals, paperless journals, online journals, scholarly electronic journals, networked journals and CD-ROM journals" (Sasse & Winkler, 1993). In simple terms, e-journal is one which is available electronically and used with the help of computer and other communication technologies (Kumar & Kumar, 2005). Broadly, electronic journal may be defined as any journal, magazine, newsletter or type of

electronic serial publication which is available over the internet. Electronic journals are often available through the internet. The same editorial process is followed for both electronic and print journals. After this process, journals are published. The e-journals are available in many forms. The criterion for their classification depends on format of publishing, distribution and access. Free access may be partial or complete to the journal. They can be classified according to the content also. If the content is of pure academic nature, then they are known as scholarly journals (Kumar & Glover, 2007).

From the seventeenth century, the print-based journal has been the known form of scholarly communication. That notwithstanding, with the emergence of internet and World Wide Web in the 1990s, some journal forms have been changed into digital version that saves physical storage, facilitate different searching capabilities and speed both access and delivery of articles to readers. This has resulted in a paradigm shift in scholarly communication, from printed journals as the principal medium of communication to electronic journals. In view of the potential benefits provided by electronic journals, many academic libraries have accepted electronic journals and stopped subscription to printed journals (Mutula, 2007; Thanuskodi, 2011). The first studies conducted in the course of the 1990s made it clear that electronic journals had come to stay (Ollé & Borrego 2010).

Yu and Tao (2009) stated that the advent of compact discs and local databases in the 1980s and then the World Wide Web in the 1990s have greatly changed the structure of scholarly communication. These innovations have offered new and quick access to

information sources in the form of online databases. As important providers of information technology to students and faculty members, universities are trying hard to offer the new technologies for scholarly communication. Electronic journals have displaced print versions in no time, with convenience and digital visibility being major contributing factors in the new information environment (Rowland, 2007).

In a recent report by Gray (2011), it was found that academics in the UK were making the maximum possible use of e-journals at an average download of 47 articles per year per library user. Bar-Ilan and Fink (2005) later discovered that, more than 80% of the scholars at the Science Library of the Hebrew University frequently used electronic journals despite their rank and age.

In a survey on the use of electronic journals by the academic staff of the universities belonging to the Consortium of Academic Libraries of Catalonia, Borrego et al. (2007) found that a high proportion of teaching and research staff were aware of the collection of electronic journals and that there was an increasing preference for the electronic to the detriment of the printed format. Longitudinal data put together at the University of Illinois at Chicago Library came to a different conclusion, that is, print journals may continue to be largely used even after the introduction of electronic journals (de Groote et al., 2005; de Groote, 2008).

Nowadays, the use of electronic journals is becoming necessary among academic staff and researchers throughout the world compared to the printed journals. For example, in

higher education, scholarly electronic journals have become essential tools for learning and research as they provide access to timely, high quality and relevant scientific information to scholars and researchers with a view to keep them abreast with new discoveries and developments. Besides, academic staff members use electronic journals to update their lecture notes as well as avoiding duplication of efforts. On the other hand, electronic journals have added great resources to the collection and improved library services, facilitated access to journal literature and reduced demand for photocopy services and document delivery (Madhusudhan & Chirra, 2009; Madhusudhan, 2010).

A lot of progress has been made in the last few years to ensure that scholars and researchers in Africa have access to the growing quantities of information produced in electronic format now. In setting up the necessary network infrastructure and providing the required hardware and software, support has been provided. Also, there have been discussions with publishers which have resulted in electronic journals and databases being made free or at heavily reduced prices through programmes like Access to Global Online Research in Agriculture (AGORA), Health InterNetwork Access to Research Initiatives (HINARI), The Essential Electronic Agriculture Library (TEEAL) and Programme for the Enhancement of Research Information (PERI), Online Access to Research on Environment (OARE) and a lot of training has taken place (Rosenberg, 2006).

2.2.3 Introduction of Electronic Journals in Ghana

The historical background of the introduction of scholarly electronic journals and databases to scholars in academic institutions in Ghana could be traced to the mid-1990s. For many years, lack of finance, human and material resources in Ghanaian University Libraries led to critical problems for academics and researchers in their access to and delivery of relevant information. In 1993 the Interlibrary Lending and Document Delivery (ILLDD) Section of the International Federation of Library Associations and Institutions (IFLA) had a discussion on the lack of scholarly journals and access to electronic resources in academic libraries in the developing countries which brought about the gap between the developed and developing worlds. Access to e-resources as was agreed, would help to bridge this gap and in addition support should be sought from development partners. The Danish International Development Agency (DANIDA) accepted to support the project in Ghana as one of the chosen sites for the pilot project (Asamoah-Hassan, 2010).

In 1996, the project started with a Seminar in Accra where five (5) academic libraries; University of Ghana, Accra, Kwame Nkrumah University of Science and Technology, Kumasi, University of Cape Coast, University for Development Studies, Tamale and Institute for Technological Information (INSTI) participated. Under the DANIDA project in 2002, funds were made available for International Network for the Availability of Scientific Publications (INASP) to negotiate licenses and provide online scientific journals to the five (5) institutions. These were provided through the Programme for Enhancement of Research Information (PERI) project, which existed until recently. This

is because PERI negotiates for heavy discount prices for electronic databases for libraries in some developing countries. To the institutions mentioned above, access was made available to about eight (8) online databases with CD-ROMs for some of them. Librarians in these institutions were given training in the use and management of ICT and in the effective and efficient use of the internet as well as interlibrary loans and document delivery. Subscription to e-resources was funded and a VSAT was installed at the University of Ghana campus for the use of the five (5) institutions and so they were provided with internet connectivity. The support from DANIDA ended in 2004 and that brought about the establishment of a consortium in Ghana (Consortium of Academic and Research Libraries in Ghana) in order to continue to enjoy the benefits of scholarly electronic journals up-to-date (Asamoah-Hassan, 2010).

2.3 Accessibility of Electronic Journals

Coonin (2002) asserts that, journals available in electronic format are now an accepted norm for many academics. Progressively, librarians who purchase electronic journals are becoming aware of the need to urgently consider accessibility issues. However, many are not certain about how to actually determine whether a product is accessible, and what to do if it is not. Should we refuse to purchase the product? What can we suggest to the publisher or vendor to correct accessibility problems? Whose responsibility is accessibility, ultimately?

Zhang (2001) reported that, accessibility of information sources has been re-examined with the advent of electronic information systems, and more recently the internet and

related network technologies. Accessibility of electronic sources has many new scales which include; accessibility to a network connection, a computer, and other necessary equipment found to be directly related to the use of information sources and users' selection of an information channel to pursue information. Accessibility also includes rapidly outdated technologies which make electronic sources inaccessible; complicated logging in and registering procedures which may serve as barriers to the use of a digital library system; and a large percentage of cited electronic sources that are not accessible.

University libraries in developing countries are adjusting to the new essentials of rapid access to information to help their users (Nwezeh, 2010). Kumar and Grover (2007) posit that, accessibility of published research comes with ease by electronic journals. Keyword search is being offered through electronic journals by a lot of publishers. Electronic journals can be accessed anywhere by a user through the computer. If the subscription to e-journals is multi-user or free on the World Wide Web (www), then a number of users can access them at a time.

Access and subscription to a number of electronic journals required considerable computer hardware and technical expertise as they were available on CD-ROM for many years. In recent times, electronic journals are obtained through the internet which gives ease of access and also accepted by a wide range of technologies. Access to online journals is being provided by publishers and aggregators by assigning passwords to library patrons or through IP addresses of universities and institutions. The difficulty in

this is maintaining a set of distinctive passwords for libraries and service providers (Kling & Covi, 1995).

Kumar and Grover (2007) observed that, the access by IP address is restricted to only the university campus. As such, users cannot access electronic or online journals at home. Generally, internet connection speed at home is not fast enough to enable easy transmission of networked electronic journals. At times, publishers and universities' servers are down and the URLs of some of the electronic journals too do not work accurately. Sometimes, one journal may have a number of the URLs so it becomes very difficult for librarians to decide which webpage is a home page. On the other hand, users are also faced with the problem of which website to cite in their research work. The URLs of many electronic journals cease to exist after sometime and users are also embarrassed by the expired links of these electronic journals.

According to Khan et al. (2009), a number of universities and institutions nowadays are providing access to databases online for their users to facilitate learning, research, and development. It is acceptable that a large number of databases are accessible on the internet which can be accessed free of charge in the universities. Ugwu and Onyegiri (2013) also stated that "accessibility of these resources is re-defining the vision and mission of university libraries today"

According to Walker (2006), users usually prefer to access and use materials from more than one content provider, so there is no option for them but to interact with different user

interfaces. But even with this, every service has a distinct user interface for discovery, with its different set of “presentation services” that a user must study and understand. Walker (2006) further stated that, electronic access provides invaluable opportunities for people to access and find a large amount of knowledge. The targets of search engines like Google, MSN and Yahoo recently is the traditional library user. As such, there is an increasing pressure now on libraries to develop and offer quality and efficient services to their users where and when they need them being on the network and within their preferred work or study environment.

There has been a tremendous improvement in the accessibility to electronic contents as compared to earlier times when print information was the order of the day. Nowadays, there are a lot of channels available to scientist by which they can locate and access published literature, bibliographic databases among others. It is therefore necessary to consider the effect of increase in the available information and the improvement in its accessibility on scholars’ information behaviour (Borrego & Olle’, 2006).

According to Mukherjee (2009) instant access to contents is one of the major advantages of e-journals. Commercial publishers use different models to deliver e-journal content. During her research Hiom (2004) found out that, in recent times students depend on online journals the more for their research work and other information needs. She mentioned technical difficulties while sharing her own experience in accessing e-journals at the primary stage and as a result, suggested the need for the web to be better structured to provide the right direction for researchers and other users.

Kaur and Verma (2009) found that, due to easy access to e-journals available at different locations in the institute, users are able to access these resources in hostels and departments more in comparison to the library. Therefore, the number of users going to the library decreased. Coonin (2002) states that, appropriate assistive or useful technology such as screen enlargers, properly configured screen readers, and modified computer keyboards, is critical to accessibility. Nonetheless, these adaptive technologies by themselves cannot pay for web pages that are not properly designed and formatted. If web pages are not well designed, there is very little the individual user with a disability or “the assistive technology librarian” can do.

2.4 Utilisation of Electronic Journals

Many studies have shown that scholarly electronic journals are becoming more important to scholars and researchers (Msagati, 2014). Nicholas and Huntington (2006) noted that there was an increasing dependence on e-resources by scholars and a high incidence of non-traditional types of resources. Bonorino and Molteni (2007) found that for over a decade now, Argentine private universities had improved access to information for their academic community members. Researchers and students needed quick access to current and valid information. As research and curricular content are supported, new ways of approaching a repetitive occurrence which users need for electronic resources were recommended. Ani (2005) also indicated that electronic resources are now very popular in higher learning institutions all over the world.

To Lynch (2003) by 1998, studies began to indicate that electronic access to journals was increasing in popularity among faculty members. Okello and Magara (2008) reported lack of awareness of electronic journals as a common hindrance in higher institutions. According to Negahban and Talawar (2009), e-resources in reality have become the backbone of many academic institutions. A lot of research works have been conducted on the use of electronic resources in institutions of higher learning.

Abdul and Ahmad (2009) in their study to find out the level of use of e-journals by research scholars in two Indian central universities in Uttar Pradesh, India's most populous state observed that with the advent of globalization in the realm of education, there has been an information explosion. There was a rapid change in the environment to an electronic one and the use of e-journals was the most popular source of undertaking research.

In a survey conducted by King and Montgomery (2002) on the impact of migration to electronic journals on faculty and doctoral students at Drexel University, Philadelphia they concluded that 70% of the faculty members and 77% of doctoral students preferred access to electronic resources which was higher than any other information sources. Ansari (2010) also states that, electronic resources are widely used in universities.

Studies in Tanzania in particular, show that there was under-utilization of scholarly electronic journals in higher institutions of learning (Kinengyere, 2007). Okello and Magara (2008) in supporting this notion of under-utilization stated that, the common

hindrance in the use of electronic journals in higher learning institutions was lack of awareness of the resources.

Islam et al. (2011) discussed the usage of e-journals subscribed by the Dhaka University Library and reported low usage of the electronic journals due to major hindrances like lack of knowledge or awareness of e-journals among students and faculty members, lack of adequate fund allocation to subscriptions, lack of knowledge about the links to e-journals, lack of computer skills, lack of adequate computer lab facilities, and lack of training and orientation programs.

Nyika, (2006), and Lwoga (2007) posit that under-utilization of scholarly electronic journals in the library was solely attributed to lack of information literacy skills among library users, limited access points, low bandwidth and recurrent power outages. Ani (2010) observed that despite the fact that undergraduate students in Nigerian universities intensively use the internet, the use of electronic resources such as electronic journals and online databases by them was not encouraging at all. In another study on the use of electronic information services by undergraduate nursing students at the University of Namibia's Northern Campus, Ndinoshiho (2010) found that many electronic resources were considerably under-utilized. The basic obstacles in using these resources were the shortage of computers, unreliable internet connection and lack of skills.

Bablhavaeji and Anaraki (2013) found low usage of scholarly electronic journals and other electronic resources as opposed to search engines such as Google and Yahoo which

were reported to be mostly used when they conducted a study to investigate the awareness and ability of medical students in using electronic resources of the integrated digital library portal in Iran. Kinengyere (2007) reported that the available information was under-utilized. His study also showed that information “availability does not mean actual use” because the users may not be aware that such resources are in the running. They may not also know how to access them or not even what the resources have to offer. He further stated that in most cases, there is a positive connection between the utilization of electronic resources and improvement in the quality and quantity of research output. Manda and Nawe (2009) also observed that this relationship is controlled by some factors such as technology, infrastructure, nature of the organization and individual.

Manda (2005) observed other factors that led to the under-utilization of electronic resources in academic and research institutions in Tanzania to include lack of accessibility to computers connected to internet, low internet bandwidth and unreliable power supply. Manda (2005) also observed other factors that led to the under-utilization of electronic resources in academic and research institutions in Tanzania to include lack of accessibility to computers connected to internet, low internet bandwidth and unreliable power supply. Manda (2005) also observed other factors that led to the under-utilization of electronic resources in academic and research institutions in Tanzania to include lack of accessibility to computers connected to internet, low internet bandwidth and unreliable power supply.

In a study conducted by Oyedapo and Ojo (2013) on the use of electronic resources at Obafemi Alowowo University, Nigeria under-utilization of electronic resources was

observed. The major reason for the very poor utilization of electronic resources was poor searching skills. Baro et al. (2011) also studied awareness and use of online information resources by medical students at Delta State University in Nigeria and found that scholarly electronic journal databases were under-utilized. Users cited lack of awareness of the existing resources as the primary problem they had. Okello and Magara (2008) supported this notion of under-utilization and found that the obstacle to access and utilization of electronic journals by Makerere students in Uganda as well as students in other higher learning institutions was lack of awareness about the resources.

Vasishta (2013) observed that the decisive factor in the effective use of complicated services such as electronic journals is promotion. He made an argument that because electronic journals are developing as a new information platform, their promotion requires more than just awareness. Likewise, Achonna (2008) noted in the course of his study on library services rendered through the internet that usage of electronic journals was poor and among the reasons given by users were lack of skills to use the resources, power outage and inadequate computers as common challenges facing usage of electronic resources.

Ajebomogun (2007) reported that, whereas electronic journals have become necessary tools for learning, research, teaching and consultancy, large number of scholars and researchers are not fully utilizing them. In support of this, Rehman and Ramzy (2004) shared the same sentiments by noting that even though libraries have acquired and installed the latest, most technologically advanced computerized information systems and

purchased costly resources, they may not be fully utilized as a result of lack of awareness or inability to use these resources among the users. Hence, it is dependent on the library professionals to make sure that such electronic resources are effectively and efficiently utilized by training and adopting proactive marketing techniques.

2.5 Access and Use of Electronic Resources in Ghanaian Universities

Ghanaian universities have not been left out in the area of electronic resources most especially electronic journals. They are now adopting electronic resources and this has been indicated by several researchers including Asamoah-Hassan, (2003); Martey, (2004); Dadzie, (2005). Public universities in Ghana started computerization from as far back as the mid-1980s and some of them have succeeded in providing services like the use of CD-ROMs, internet connectivity and access to databases of full text journal articles and abstracts (Asamoah-Hassan, 2003).

According to Alemna and Adanu (2005) Ghana, like the rest of Africa has a new experience with electronic telecommunications and much of it has been in areas other than the academic environment. Usually, computers were used for the purposes of generating payrolls and the other related accounting areas. Generally electronic communication is new to most African countries and major part of its story is as a result of donations rather than through purchase or acquisition.

Adika (2003) analyzed internet use among faculty members of universities in Ghana. Findings revealed that in spite of the benefits of the Internet, its use among faculty was

still very low. The main reasons for this were the lack of access to the Internet and the absence of skills. Dadzie (2005) investigated the use of electronic resources by students and faculty of Ashesi University, Ghana, to determine the level of use, the type of information accessed and the effectiveness of the library's communication tools for information research and problems faced in using electronic resources. Results from the study indicated that 85 percent of students and faculty used the internet (search engines) to access information, and that students and faculty mainly accessed information in the library by browsing the shelves.

Bayugo and Agbeko (2007) investigated faculty members' preferences for specific databases and full-text journals in a survey they at the University of Ghana. They found that, faculty members were not aware of some journal databases available at the library which resulted in their under-utilization. According to Dadzie (2005), university libraries in Ghana are being challenged to provide access to electronic resources to support teaching, research and learning library resources, whether print or electronic are expensive and for the latter in particular, its continued use depends to a large extent on the sustainability of the current technological and infrastructural development of the university. With falling library budgets, there is the need to maximize the use of available electronic resources to justify the financial investment involved in the maintenance of these in academic libraries.

The introduction of these electronic resource services in Ghanaian university libraries has not been without challenges. Martey (2004) described the ICT scene from 1996 to 2004

in libraries as being slow and attributed the reasons to the high cost of information and communication infrastructure as well as the lack of technical expertise. Adika (2003) described lack of access to the internet and the need for training as the two main reasons why the internet is not effectively used to access current information by faculty on campus. Dadzie (2005) attributed reasons of low patronage of online databases to include lack of awareness of electronic resources, lack of time to access and too many passwords to remember. Differences in use have been revealed by studies on usage of other electronic resources such as library OPACs, e-books, and subject gateway projects.

2.6 Factors Influencing Accessibility and Utilisation of Electronic Journals

Some factors such as awareness, information search skills, differences in discipline, status of user, age, gender, information explosion, access and ease of computers influence access and use of electronic journals.

2.6.1 Awareness

According to Bonthron et al. (2003), when users are aware of e-resources, some see the advantages of using them in a way that benefit them. As such, they would go straight to the collections and search the databases as a first step. Asemi and Riyahiniya (2007) however state that, awareness does not necessarily guarantee the use of electronic resources.

Awareness can greatly influence the access and use of electronic journals in the library. The reason is that, it would be highly difficult if not impossible for anybody to access and

use something that he or she is not aware of even if the person possesses all the necessary. Informed library patrons would attest to the fact that, libraries have a wide range of collections or resources that are more academic than most websites. Services which otherwise would not have been patronized could be highly utilized if users or the target group of people are aware of them (Bentil, 2011).

Asemi and Riyahiniya (2007) indicated in a study that it is very critical to create awareness of the e-journals available from the library in order to influence usage of the e-journals. They further stated that, when users become aware of the resources it mostly lead to a corresponding effective and efficient access and use of those resources. Bayugo and Agbeko (2007) found that, faculty members were not aware of some journal databases available at the library which resulted in their under-utilization.

Shuling (2007) analysed the use of electronic journals in Shaanxi University of Science and Technology in China. Results of the study showed that, majority of respondents were not fully aware of the available electronic journals. Ansari (2010) reported of similar findings in a study on the use of electronic journals among academics at the University of Karachi. This study revealed that majority of respondents did not know much about the electronic journals and this resulted in their poor use. He concluded that, unawareness was one of the major reasons for the non-use of e-journals.

2.6.2 Information Searching Skills

It will be very difficult if not impossible for one to access e-resources without adequate computer searching skills (Okello-Obura & Magara, 2008). That is, to access and utilize the growing range of e-resources, one needs to acquire and practice the skills necessary to exploit them. Ansari (2010) posits that, there is a direct relationship between computer literacy and use of electronic resources. Okello-Obura (2010) having similar views states that it is only when one knows how to use a computer that he can learn how to access electronic resources. This is a challenge which needs to be analysed critically and implemented

Waldman (2003) asserts that, juggling many screens, many technologies, multi-tasking electronic jobs, and also knowing where to look for the required information requires that user is proficient in the use of computers. Hayati and Jowkar (2008) in their study on the process of adoption of electronic reference materials in academic libraries in Iran found that the main factors which affect the utilization of electronic reference materials including e-journals begin from unfamiliarity of academic librarians and users with computers and searching the databases. Rehman and Ramzy (2004) carried out an investigation into awareness and use of electronic information resources among health academics at the Health Science Centre of Kuwait University and found that lack of computer searching skills was one the reasons for not using e-resources. Bonthron et al. (2003) in a study on the trends in the use of e-resources in higher education in the UK revealed that some students and academic staff do not use e-journals due to lack of searching skills.

2.6.3 Differences in Disciplines

A number of researchers have reported differences in disciplines as one of the factors affecting the use of electronic resources. That is, how different disciplines do their work affect their adoption and use of electronic resources. Bonthron et al., (2003) argued that differences in the use of electronic resources among the various disciplines do exist. The disciplines can be generally categorized as the sciences, the social sciences and the humanities.

Discipline has been observed to have a high impact on patterns of usage and preferences such that science faculty members happen to use the internet more intensely than other members of the faculty in humanities or social sciences (Bar-Ilan et al., 2003). Barrett (2005) interviewed ten graduate students in humanities departments at the University of Western Ontario, Canada and only one strongly disagreed with the stereotype that humanities dislike electronic information technology.

Some researchers however, have come out with findings about humanities scholars that do not agree with the belief that humanist do not easily adopt electronic resources. In a web-based survey of humanities scholars, Toms and O'Brien (2008) saw an appreciable change from earlier studies that observed reticence among humanists to use electronic journals. Bass et al., (2005) and Sukovic (2008) also share similar views.

Comparing with social science scholars, there seems to be a difference in the usage of electronic journals by humanists. The social scientists on the other hand adopt electronic

journals more than their humanist counterparts. Many research findings have revealed this fact. Negahban and Talawar (2009) revealed in a study that Iranian social science faculty members were highly dependent on electronic journals for academic work. A survey conducted by Nwagwu et al., (2009) on the use of the Internet by students of University of Ibadan, Nigeria revealed that science students dominated in use of the electronic journals. Sheeja (2010) concluded after a study that the use of electronic resources especially the internet was most prominent among science students.

2.6.4 Status or Category of User

Category of user or status has been identified as a factor that can affect the use of electronic journals (Bentil, 2011). Educational level measures individuals' intellectual development. "This is obviously expected to affect people's use of a facility that is evolving fast, varying in cost and use sophistication and this has always been the case" (Ellison, 2001).

Amstrong et al., (2001) conducted a study in which they observed that undergraduate students used electronic journals less often for academic assignments, background research and sometimes, project work. In addition, postgraduate students are more familiar with electronic journals and their patterns of information behaviour are likely to vary depending on whether they are pursuing a research degree (PhD, MPhil), a specialist Master's degree or MBA programme.

Bjork and Turk (2000) also revealed that faculty used electronic journals more than students. Some researchers also made similarly arguments that graduate students, particularly PhD students as well as faculty are often found to be heavy users of (2002). These observations however contrast with those of Bar-Ilan et al., (2003) who argued that academic rank has only a little influence on the usage of electronic resources.

2.6.5 Age

Age is a very controversial factor and one that is less conclusive (Tenopir, 2003). Babcock (1997) as quoted in Bentil (2011) stated that age is one variable that correlates with comfort with computers and use of electronic resources. Younger generations have been brought up with computers but older students may not have had as much exposure to computers resulting in increased computer anxiety.

Ellison (2001) who shares similar view argues that, the age of an individual influences access and use of electronic resources and that, it often indicates generational gaps. Bar-Ilan et al., (2003) also reported that, age was a major factor in usage of e-resources, in that, the younger the faculty members, the more they use electronic sources. Age of the user influences the use of electronic journals. In other words the higher the age, the lesser the access and usage. Again, as researchers and students prefer electronic journals, faculty prefers print journals (Kling & Covi, 1995).

Monopoli et al., (2002) reported in a study that users between the ages of 21 and 34 used electronic journals most frequently. Palmer and Sandeler (2003) also found that older

University of Michigan social sciences faculty members tended to prefer print more often than did younger faculty. Age was identified as making a difference in how faculty members, staff and students at Colorado State University rated their computer skills, with more respondents under 30 rating their skills as good (Cochenour & Moothart, 2003).

2.6.6 Gender

Abdullah (2003) states that gender is a significant factor and that, males are more likely to use electronic resources more than females. According to Waldman (2003), gender is one of the important factors in studying the use of electronic resources. She found in her study on students that their attitude and use towards computers tended to vary by gender. Finholt and Brooks (1999) gave a report of a study in which they found males to be slightly more frequent users of JSTOR database.

Nonetheless, these views are against the views of Tahir et al., (2010) and Bar-Ilan et al., (2003) who noted in a study that gender had minor or no effect on the use of these resources. A study by Ford et al., (2001) revealed that although there are some gender differences in computer use, there was no link between female gender and low self-efficacy. That is to say, it is not the gender variable that determines the degree of self-efficacy.

2.7 Problems with Access and Use of Electronic Resources

Traditional obstacles such as connectivity, cost, capacity and culture were observed to have hampered the implementation of health ICTs in developing countries and sub-

Saharan African countries according to Bukachi and Pakenham-Walsh (2007). They further stated that connectivity continuous to be very poor in the African continent as it takes a very long period of time to download a single article on the internet. The major challenges include lack of local expertise and human resources capacity, organizational capacities to support the ICTs, internet services, computer hardware as well as capacity to use electronic devices (Jensen, 2007).

Vakkari (2008) affirmed that enabling electronic information environment has a huge influence on the accessibility and utilization of e-resources at universities. The results of a study conducted by Ahmed (2013) on the use of electronic resources by faculty members in diverse public universities in Bangladesh showed that academic staff were not generally satisfied with the current level of e-resources subscribed by the public universities. They pointed to limited number of titles, limited access to back issues, difficulty in finding information, inability to access from home, limited access to computers and slow download speed as major constraints. These identified constraints do affect the usage of e-resources in the public universities and may also lead to other constraints such as an unwillingness to use the resources regularly and consequently low satisfaction with such resources.

Kumar and Grover (2007) reported that instability of electronic journal collection due to breaks in links and coverage changes as well as change of distributors make updating of the electronic journal databases a new major issue which pose accessibility problems.

The reason is that, library users ask many questions about the access of e-journals as they would like to know where they can access these e-journals.

In a survey carried out by Trivedi and Joshi (2009) to examine the use of e-journals and print journals by health care professionals in Gujarat, India, they found that most of the research scholars were making reference to e-journals as well as print journals from their departmental library and the computer centre in the Central Library. However, the study revealed some inherent accessibility problems which include inability to retrieve relevant health-based information through various advanced databases like MD-Consult, EBSCO, ProQuest, and Science Direct as a result of computer illiteracy, lack of computer training. Other technical challenges like slow downloading, slow connectivity, and subjective strain to eyes were also present while using e-journals.

2.8 Conclusion

It is very obvious from the literature that electronic resources and electronic journals in particular have revolutionized the management of information. Factors such as information searching skills, awareness, and differences in disciplines among others influence the decision to access or utilize electronic journals. However, research on age and gender are less conclusive and controversial. Electronic journals are now popular and have become a major resource in academic environments in the world over for faculty to support academic endeavours.

In Africa and specifically Ghana, electronic journals in academic libraries are gradually gaining grounds even though it is a novelty. Ghanaian university libraries have embarked

on computerization and now provide electronic journals services. Majority of these resources are enjoyed through the efforts of the Consortium of Academic and Research Libraries in Ghana (CARLIGH) which was established in 2005. The gap left is empirical studies on the level of accessibility and utilization which this study fills.

REFERENCES

- Abdul, M. K., & Ahmad, N. (2009). Use of e-journals by research scholars at Aligarh Muslim University and Banaras Hindu University. *The Electronic Library*, 27(4), 708-717.
- Adika, G. (2003). Internet use among faculty members of universities in Ghana. *Library Review*, 52 (1), 29-37.
- Ahmed, S.M. Z. (2013). Use of electronic resources by the faculty members in diverse public universities in Bangladesh. *The Electronic Library*, 31(3), 290 – 312.
- Ajebomogun, F. O. (2007). Impediments to harnessing scholarly electronic journals on the internet in developing countries: A Nigerian university case study, *Library Hi Tech News*, 24(6), 27 – 32.
- Alemna, A. A., & Adanu, T. (2005). Internet use at the Balme Library. *Library Hi Tech News*, 22(2), 25-26.
- Armstrong, C., Fenton, R., Lonsdale, R., Stoker, D., Thomas, R., & Urquart, C. (2001). A study of the use of electronic information systems by higher education students in the UK. *ASLIB*, 35(3), 241-262.
- Anaraki, L. N., & Babalhavaeji, F. (2013). Investigating the awareness and ability of medical students in using electronic resources of the integrated digital library portal of Iran: A comparative study, *Electronic Library*, 31(1), 70 – 83.
- Anchonna, A. U. (2008). *Extending the frontiers of library services through the Internet*. Samaru Journal of Information Studies, 8(2). Accessed on 20/10/14 from: <http://www.ajol.info/index.php/sjis/article/view/44827>

- Ani, O. E. (2010). Internet access and use: A study of undergraduate students in three Nigerian universities. *The Electronic Library*, 28(4), 555-567.
- Ani, O. E. (2005). Evolution of virtual libraries in Nigeria: Myth or reality? *Journal of Information Science*, 31(1), 67-70.
- Ansari, M. N. (2010). Use of electronic resources among academics at the University of Karachi. *Library Philosophy and Practice*. (e-journal) Paper 385. Retrieved on 14/04/15 from: <http://digitalcommons.unl.edu/libphilprac/385>
- Asamoah-Hassan, H. (2003). Information: The oil in the wheel of national development. *Ghana Library Journal*, 15, 1-14.
- Asamoah-Hassan, H. (2010). *The Consortium of Academic and Research Libraries in Ghana (CARLIGH): The journey so far*. Accessed on 12/12/14 from: dspace.knust.edu.gh.
- Asemi, A., & Riyahiniya, N. (2007). Awareness and Use of Digital Resources in the Libraries of Isfahan University of Medical Sciences of Iran. *The Electronic Library*, 35(3), 202- 238.
- Bar-Ilan, J., & Fink, N. (2005). Preference for electronic format of scientific journals: A case study of the Science Library users at the Hebrew University. *Library & Information Science Research*, 27, 363-376.
- Baro, E. E., Endouware, B. C., & Ubogu, J. O. (2011). Awareness and use of online information resources by medical students at Delta State University in Nigeria. *Library Hi Tech News*, 28(10), 11 – 17.
- Barrett, A. (2005). The information-seeking habits of graduate student researchers in the humanities. *Journal of Academic Librarianship*, 31(4), 324-331.

- Bass, A., Fairlee, J., Fox, K., & Sullivan, J. (2005). *The information behaviour of scholars in the humanities and social sciences*. Seattle: University of Washington.
- Bayugo, S. S., & Agbeko, K. S. (2007). Information seeking behaviour of health sciences faculty at the College of Health Sciences, University of Ghana. *Information Development*, 23(1), 63-70.
- Bentil, W. (2011). *The Use of Electronic Resources in Ghanaian Universities: a comparative study of the University of Cape Coast and the Central University College*. (Unpublished M.Phil thesis). Department of Information Studies, University of Ghana, Legon.
- Bjork, C. B., & Turk, Z. (2000). *A survey of the impact of the internet on scientific publishing in construction of IT and construction management*. Accessed on 6/09/14 from: <http://www.itan.org/2000/5>.
- Bonorino, A. G., & Molteni, V. E. (2007). Electronic journals collection in Argentine private academic libraries. *The Electronic Library*, 25(1), 65-79.
- Bonthron, K., Urquart, C., & Thomas, R. (2003). *Trends in use of electronic journals in higher education in the UK: Views of academic staff and students*. *D-Lib Magazine* (June), 9(6). Accessed on 12/12/14 from: <http://www.dlib.org/dlib/June03/authors/06authors.html#BONTHRON>
- Borrego, A., Anglada, L., Barrios, M., & Comellas, N. (2007). Use and users of electronic journals at Catalan universities: The results of a survey. *Journal of Academic Librarianship*, 33, 67-75.

- Borrego, A., & Ollé, C. (2006). A qualitative study of the impact of electronic journals on scholarly information behavior. *Library & Information Science Research*, 28(4), 24-40.
- Chirra, R., & Madhusudhan, M. (2009). Use of electronic journals by doctoral research scholars of Goa University, India. *Library Hi Tech News*, 26(10), 12 – 15.
- Cochenour, D., & Moothart, T. (2003). E-journal acceptance at Colorado State University: A case study. *Serials Review*, 29(1), 16-25.
- Cohen, L.B., & Calsada, M. M. (2003). Web accessible databases for electronic resource collections: A case study and its implications. *The Electronic Library*, 21(1), 31-8.
- Connell, T. H., Rogers, S. A., & Diedrichs, C. P. (2005). OhioLINK electronic journal use at Ohio State. *Libraries and the Academy*, 5, 371-390.
- Coonin, B. (2002). Establishing accessibility for e-journals: A suggested approach. *Journal of Library Hi Tech*, 20(2), 207-220.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed method approaches*, (2nd ed.). Sage Publications: Thousand Oaks, California.
- Dadzie, P. S. (2005). Electronic resources: Access and usage at Ashesi University College. *Journal of Campus-Wide Information Systems*, 22(5), 290-297.
- David, N., & Paul, H. (2006). Electronic journals: Are they really used? *Interlending & Document Supply*, 34(2), 74 – 77.
- de Groote, S. L., Shultz, M., & Doranski, M. (2005). Online journals' impact on the citation patterns of medical faculty. *Journal of the Medical Library Association*, 93, 223-228.

- de Groote, S. L. (2008). Citation patterns of online and print journals in the digital age. *Journal of the Medical Library Association*, 96, 362-369.
- Delvenne, C., & Pasleau, F. (2003). Organizing access to evidence-based medicine resources on the web. *Computer Methods and Programs in Biomedicine*, 71(1), 1-10.
- Dilek-Kayaoglu, H. (2008). Use of electronic journals by faculty at Istanbul University, Turkey: The results of a survey. *Journal of Academic Librarianship*, 34, 239-247.
- Ellison, J. (2001). *E-commerce: Household shopping on the internet*. The Daily. Accessed on 5/11/14 from: <http://www.statcan.gc.ca/daily-quotidien/011023/dp011023b-eng.html>.
- Finholt, T. A., & Brooks, J. (1999). Analysis of JSTOR: The impact on scholarly practice of access to on-line journal archive. In *Technology and scholarly communication*. Edited by Ekman, R. and Quandt, E. Berkeley: University of California Press.
- Ford, N., Miller, D., & Moss, N. (2001). The role of individual differences in internet searching: An empirical study. *Journal of the American Society for Information Science and Technology*, 52(12), 1049-1066.
- Gray, C. (2011). *E-journals: Their use, value and impact-final report*. Accessed on 11/11/14 from: www.rin.ac.uk/our-work/communicating-and-disseminating-research/e-journals-their-use-value-andimpact

- Hallmark, J. (2004). *Access and retrieval of recent journal articles: A comparative study of chemists and geoscientists*. Issues in Science and Technology Librarianship. Accessed on 24/10/14 from: <http://www.istl.org/04-summer/article1>.
- Hayati, Z., & Jowkar, T. (2008). Adoption of electronic reference materials in academic libraries of Iran. *The International Information & Library Review*, 40(1), 52-63.
- Hiom, D. A. (2004). Chapter 7 - Case Study, in Neil Jacobs and Lesly Huxley (Eds.), *Online Information Services in the Social Sciences*. Chandos Press.
- Islam, S., Alam, S., & Sultana, S. (2011). Access and usage of electronic journals in Dhaka University Library (DUL): An empirical study. *Journal of the Bangladesh Association of Young Researchers (JBAYR)*, 1(2), 30-47.
- Jensen, M. (2007). The outlook for the telecentres and cybercafés in Africa. Accessed on 10/09/14 from: www.acacia.org.za/jensen_articles.htm#Jensen-outlook for telecentres.
- Kaur, B., & Verma, R. (2009). Use and impact of electronic journals in the Indian Institute of Technology, Delhi, India. *The Electronic Library*, 27(4), 611-22.
- Kennedy, M. R. (2004). Dreams of perfect programs: Managing the acquisition of electronic resources. *Library Collections, Acquisitions, and Technical Services*, 28(4), 449-458.
- Khan, A. M., Zaidi, S. M., & Bharati, M. S. Z. (2009). Use of on-line databases by faculty members and research scholars of Jawaharlal Nehru University (JNU) and Jamia Millia Islamia (JMI), New Delhi (India): A survey. *The International Information and Library Review*, 41(1), 71-78.

- Kindilchie, A. I., & Samarraie, I. F. (2008). Interaction and impact of electronic information resources on Qatar University faculty. *Libri*, 58(1), 281–293.
- King, D. W., & Montgomery C. H. (2002). After migration to an electronic journal collection: Impact on faculty and doctoral students. *D-Lib Magazine*, 8(12), 46-58.
- Kiondo, E. & Nawe, J. (2005). The impact of ICT library services in teaching, learning and research at UDSM. *Research paper*.
- Kinengyere, A. (2007). The effect of information literacy on the utilization of electronic information resources in selected academic and research institutions in Uganda. *The Electronic Library*, 25(3), 13-26.
- Kling, R. & Covi, L. M. (1995). Electronic journals and legitimate media in the system of scholarly communication. *The Information Society*, 11(4), 261-271.
- Kumar, S., & Grover (2007). Electronic journals: Impact on scholarly communication, user and library. *Library Herald*, 45(4), 325-336.
- Library Association. (1978). *Anglo American cataloguing rules*, (2nd ed.). The Library Association, London.
- Lynch, J. M. (ed.) (2003). Research questions for the twenty-first century. *Library Trends*, 51(4), 617.
- Lwoga, T. (2007). *Building Science Information Fluency in African Universities: How libraries and researchers are Benefiting from improved access to science scholarship*. Retrieved on 05/04/15 from: <http://www.ifla.org/iv/ifla73/index.htm>.
- Madhusudhan, M. (2010). Use of electronic resources by research scholars of Kurukshetra University. *The Electronic Library*, 28(4), 492-506.

- Madhusudhan, M (2007). Internet use by research scholars in University of Delhi. *Library Hi Tech News*. 24(8), 36-42,
- Manda, P. A (2005). Electronic resource usage in academic and research institutions in Tanzania. *Information Development*, 21, (4).
- Manda, P. A., & Mukangara, F. (2007). Gender analysis of electronic information resource use: The case of the University of Dar Es Salaam, Tanzania. *Library Journal, University of Dar Es Salaam*, 9(1).
- Manda.P., & Nawe, J. (2009). The impact of electronic information resource use on research output: Experiences from Universities in Tanzania. *Heartland J. Libr. Info. Sci.*, 2(1&2), 92-106.
- Martey, A. (2004). ICT in distance education in Ghana. *Library Hi Tech News*, 21(5), 16-18.
- Mirza, M. S., & Mahmood, L. (2012). Electronic resources and services in Pakistani University libraries: A survey of users' satisfaction. *The International Information & Library Review*, 20(1), 1-9.
- Monopoli, M., Nicholas, D., Georgiou, P., & Korflati, M. (2002). A user-oriented libraries: Case study of the electronic journals' service of the Library Information service of University of Patras, Greece. *Aslib Proceeding*, 54(2), 103-107.
- Msagati, N. (2014). Awareness and use of scholarly electronic journals by members of academic staff: A case study of Dar es Salaam University College of Education (DUCE). *Library Philosophy and Practice, (e-journal)*. Paper 1124. Retrieved on 05/12/14 from: <http://digitalcommons.unl.edu/libphilprac/1124>

- Mukherjee, B. (2009). Scholarly communication: A journey from print to web. *Library Philosophy and Practice* 2009, (e-journal) Paper 285. Retrieved on 02/05/15 from: <http://digitalcommons.unl.edu/libphilprac/285>
- Mutula, S. M. (2007). Paradigm shift in information environment: Prospect and challenges African libraries. *Library Hi Tech*, 25, (3).
- Ndinoshiho, J. M. (2010). The use of electronic information services by undergraduate nursing students at the University of Namibia's Northern Campus: A descriptive study. *Information Development*, 26(1), 57-65.
- Negahban, M. B., & Talawar, V. G. (2009). *Dependency on e-resources among Social Science Faculty in Iranian universities*. Chinese Librarianship: An International Electronic Journal, 28. Accessed on 5/11/14 from: <http://www.iclc.us/cliej/c128NT.html>
- Nicholas, D, & Huntington, P. (2006). Electronic journals: are they really used? *Interlending & Document Supply*, 34(2), 74 – 77.
- Nicholas, D., Huntington, P., & Jamali, H. R. (2007). The use, users, and role of abstracts in the digital scholarly environment. *Journal of Academic Librarianship*, 33, 446-453.
- Nwagwu, E. W., Adekannbi, J., & Bello, O. (2009). Factors influencing use of the internet: A questionnaire survey of the students of University of Ibadan, Nigeria. *The Electronic Library*. 27(4), 718-734.
- Nyika, E. (2006). *Development of an African Marine Science Repository for electronic publication* *Odin Pub Africa: Experience of the Institute of Marine Sciences*,

- University of Dar es Salaam, Tanzania.* Accessed on 19/10/14 from:
http://www.apsr.edu.au/Open_Repositories_2006/edna_nyika.ppt.
- Nwezeh, C. M. T. (2010). The impact of internet use on teaching, learning, and research activities in Nigerian Universities: A case study of Obafemi Awolowo University. *The Electronic Library*. 28(5), 688–701.
- Okello-Obura, C. & Magara, E. (2008). *Electronic information access and utilization by Makerere students in Uganda. Evidenced Based Library and Information Practice*, 3(3). Accessed on 5/09/14 from:
<http://ejournals.library.ualberta.ca/index.php/EBLIP/artilce/view/935/3328>
- Okore A. M., Asogwa, C. N, & Eke, H. N. (2009). Online resources and web research. In *Charles, O. Onekwu; Michael O. Okoye, and Chinwe N. Ezeani (eds.). Introduction to the use of the library and study skills*. Nsukka.: The library Department, University of Nigeria, Nsukka.
- Okon, E. A., Ngulube, P.,&Onyancha, B. (2014).Accessibility and utilization of electronic information resources for research by academic staff at selected Nigerian Universities between 2005 and 2012. *The International Information & Library Review*, 46(1-2), 51- 62.
- Oyedapo, R.O., & Ojo, R.A. (2013).A survey of the use of electronic resources in Hezekiah Oluwasanm Library, Obafemi Awolowo University, Ile-Ife, Nigeria. *Library Philosophy and Practice*. Retrieved on 14/05/15 from:
<http://digitalcommons.unl.edu/libphilprac/120>

- Palmer, C. L., & Neumann, L. J. (2002). The information work of interdisciplinary humanities scholars: Exploration and translation. *Library Quarterly*, 72(1), 85-117.
- Prytherch, R.(ed.) (2000). *Harrod's librarians' glossary and reference book*, (9thed.). Aldershot: Gower.
- Reed, B., & Tanner, D. R. (2001). Information needs and library services for the Fine Arts Faculty. *Journal of Academic Librarianship*, 27(3), 229-233.
- Rosenberg, D. (2006). Towards the digital library in Africa. *The Electronic Library*, 23(3).
- Rowlands, I. (2007). Electronic journals and user behaviour: A review of recent research. *Library & Information Science Research*, 29, 369-396.
- Rusch-Feja, D., & Siebeky, U. (1999). Evaluation of usage and acceptance of electronic journals: Results of an electronic survey of Max Planck Society Researchers including usage statistics from Elsevier, Springer, and Academic Press (full report). *D-Lib Magazine* (October), 5(10). Accessed on 6/09/14 from:
<http://www.dlib.org/dlib/october99/rusch-feja/10rusch-feja-full-report.html>
- Sasse, M., & Winkler, B. J. (1993). Electronic journals: A formidable challenge for libraries. *Advances in Librarianship*, 17, 149-173.
- Sheeja, N. K. (2010). Sciences versus social sciences: A study of information-seeking behaviour and user perceptions of academic researchers. *Library Review*, 59(7), 522-531.
- Shuling, W. (2007). Investigation and analysis of current use of electronic resources in university libraries. *Library Management*, 28(1/2), 72-88.

- Singh, S. P., & Kumar, K. (2005). *Special libraries in electronic environment*. New Delhi: Boswell.
- Sunil, T. M. K. (2014). Use of online resources at Jawaharlal Nehru University: A quantitative study. *Program: Electronic Library and Information Systems*, 48(3), 272-292.
- Sukovic, S. (2008). Convergent flows: humanities scholars and their interactions with electronic texts. *Library Quarterly*, 78(3), 263-284.
- Tenopir, C. (2003). Use and users of electronic library resources: An overview and analysis of recent research studies. Washington, DC: Council on Library and Information Resources. Accessed on 8/11/14 from: <http://www.clir.org/pubs/reports/pub120/pub120.pdf>.
- Thanuskodi, S. (2011). User awareness and use of online journals among faculty members in Combatore District: A survey. *J Commuication*, 2(1), 23-32.
- Tenopir, C. (2003). *Use and users of electronic library resources: an overview and analysis of recent research studies*. Washington, DC: Council on Library and Information Resources. Accessed on 23/10/14 from: <http://www.clir.org/pubs/reports/pub120/pub120.pdf>.
- Tenopir, C., & King, D. W. (2002). Reading behaviour and electronic journals. *Learning Publishing*, 15(4), 259-265.
- Tomney, H., & Burton, P. F. (1998). Electronic journals: A study of usage and attitudes among academics. *Journal of Information Science*. 24(6), 419-429.
- Toms, E. G., & O'Brien, H. L. (2008). Understanding the information and communication needs of the e-humanist. *Journal of Documentation*, 64, 102-130.

- Trivedi, M., & Joshi, A. (2009). Usage of electronic journals (e-journals) versus print journals by healthcare professionals in HM Patel Centre for Medical Care and Education (HMPCME). *Journal of Health Informatics in Developing Countries*, 3(1), 13-16.
- Ugwu, C. I. & Onyegiri, D.C. (2013). Management problems of electronic information resources: A case study of UNN Library. *International Journal of Library and Information Science*, 5(5), 126-133.
- Vasishta, S. (2013). Dissemination of electronic journals: A content analysis of the library websites of technical university libraries in North India. *Electronic Library*, 31(3), 278-289.
- Waldman, M. (2003). *Freshman's use of library electronic resources and self-efficacy*. Information Research, 8(2). Accessed on 2/12/14 from: <http://informationr.net/ir/8-2/paper150.html>.
- Walker, J. (2006). New resource discovery mechanisms. In Stone, G. (ed.), *The e-resources management handbook*. UKSG: London.
- Wisniewski, J., & Fichter, D. (2007). Electronic resources won't sell themselves: Marketing tips. *ONLINE*, 31, (Jan-Feb).
- Weiner, S.G. (2003). Resistance to change in libraries: Application of communication theories. *Portal: Libraries and Academy*, 3(1), 69-78.
- Vakkari, P. (2008). Perceived influence of the use of electronic information resources on scholarly work and publication productivity. *Journal of the American Society for Information Science and Technology*, 59(4), 602-612.

Yu, C. S., & Tao, Y. H. (2009). Understanding business-level innovation technology adoption. *Technovation*, 29(2), 92-109.

Zhang, Y. (2001). Scholarly use of internet based e-resources. *Journal of the American Society for Information Science and Technology*, 52(8), 628-654.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology according to Kothari (2004) is a systematic of solving a research problem. This section of the study describes the methodology that was used for the study. A method is merely a way of or a procedure for getting specified things done. Kumekpor (2002) explains that, “research methods are the methods, procedures and techniques we use in attempting to discover what we want to know.” Research methods are therefore concerned with the *how* of how one goes about discovering what one wants to know.

3.2 Research Design

Bless and Higson-Smith (2004) defined a research design as a set of procedures that guide the researcher in the process of verifying a particular hypothesis and exclude other hypothesis or explanations. It allows the researcher to draw conclusions about relationships between variables. Gorard (2013) stated that, there are no intrinsically good or bad research designs. The emphasis in research design is less on how to conduct a type of research than on which type is appropriate in the circumstances.

The survey research methodology was adopted for the study. This method allows the results of a study to be generalized from the sample perspective to the entire population (Amoafu, 2011). The survey methodology was employed to aid the collection of quantitative data for analysis and the results obtained gave a high level of reliability. Kumekpor (2002) stressed that, a survey provides an objective quantitative approach to

the study of social processes within a well-defined area at a given time by means of a schedule or questionnaire and the data obtained can be statistically related. According to Dencombe (2007) a “survey” means to view comprehensively and in detail. The survey method aims among other things to understand some specific problems at a particular time, study opinions and attitudes towards major social, economic and political issues, locate individuals or groups with specific views as to specific social issues and so on. Babbie (2010) also states that, surveys are chiefly used in studies that have individual people as units of analysis. The study was also comparative in nature because there was intent compare the accessibility and utilization of electronic journals at GCUC with that of CSUC.

3.3 Selection of Cases

The cases or study settings investigated were the Garden City University College and the Christian Service University College which are private university colleges in Kumasi, Ashanti region of Ghana. The justification for the selection of both institutions are that, most works in the area of this research in Ghana have concentrated on the public universities especially the University of Ghana, Kwame Nkrumah University of Science and Technology and the University of Cape Coast.

GCUC being a member of the Consortium of Academic and Research Libraries in Ghana (CARLIGH) has a number of scholarly electronic journal databases at the disposal of its academic staff unlike CSUC and this will provide a sound basis for comparison as the academic staff of CSUC are able to access only scholarly electronic journals which are free online, for example, Directory of Open Access Journals (DOAJ). The selected

institutions have similar structures and for that matter the findings of the study can be generalised. These two sites are also accessible to the researcher and as such, data collection was highly feasible.

3.3.1 Population

According to Neuman (2006) population is the unit being sampled, the geographical location and the temporary boundaries. It can be a person, organisation, a written document or a social action. The concept of population, according to Busha and Harter (1980) as quoted in Asamoah 2014 is fundamental to social research. It is described as any set of persons or objects that share common characteristics. The academic staff of GCUC and CSUC constitute the population for the study. The total number of academic staff at Garden City University College is 89 and that of Christian Service University College is 98. The population for the study therefore comprises of lecturers, research staff and librarians who are all considered as academic staff in the context of the study. Table 3.3.1 below gives the breakdown of the total population of academic staff from both institutions.

Table 3.3.1: Population of Academic Staff from CSUC and GCUC

CSUC		GCUC	
Discipline	Population size	Discipline	Population size
Sciences	34	Sciences	56
Social Sciences	38	Social Sciences	33
Humanities	26	Humanities	-
Total	98		89
Grand Total	187		

3.3.2 Sample Size

Kumekpor, (2002) observed that sample size consists of population of the number of units selected for investigation. The sample size has an effect on how the sample can accurately represent the population (Burns & Bush, 2010). The larger the sample size, the more likely the generalizations are accurate reflection of the population (Saunders, Lewis & Thornhill, 2009). According to Neuman (2006) in a population under 1000, a researcher needs a sample ratio of about 30 percent. In another way Fraenkel and Wallen (2000), states that there is no clear-cut answer to what constitutes an adequate or sufficient size for a sample. However, there was no sampling in this research because the total number of the population was relatively small and manageable within the time frame for the study and this suggests the reason why the researcher used total enumeration of all the **187** staff members.

3.4 Instrumentation

According to Hsu and Sandford (2010), instrumentation refers to the tools or means by which investigators attempt to measure variables or items of interest in the data collection process. It is related not only to instrument design, selection, construction, and assessment, but also the conditions under which the designated instruments are administered. The instrument is the device used by investigators for collecting data. The research instrument that was used in the study was primarily questionnaire. Sauders et al. (2009) stated that the validity and the reliability of the data a researcher collects as well as the response rate achieved depend to some extent, on the design and structure of your questionnaire.

This study used self-administered questionnaire designed by the researcher to collect data. The self-administered approach of questionnaire was preferred to the other methods namely mailed, individual, group and digital. According to Bouffard and Little (2004) questionnaire is very effective for assessing program satisfaction and can easily be administered. Questions elicited data regarding accessibility and utilization of electronic journals by the academic staff of GCUC and CSUC.

3.4.1 Questionnaire

A questionnaire is a well-known strategy of data collection used in the social sciences especially in large-scale surveys. It is very relevant especially when respondents cover a wide geographical area such that interviewing all respondents is impossible as a result of limited resources. It is a form of questioning that is written, whereby questions are

determined in advance by the researcher and usually the category of responses are also decided in advance. They could be open-ended where the respondent has the opportunity to answer in his/her own words or closed-ended where the respondent is obliged to choose from probable answers (Amekuedee, 2002).

The questionnaire instrument was adopted due to the number of subjects involved in the study and also the fact that they are educated and for that matter can easily and conveniently fill or complete them. It comprised both open-ended and closed-ended questions. The open-ended items used helped respondents to express their views on some issues pertaining to accessibility and utilization of electronic journals at GCUC and CSUC that need clarification. The open-ended questions also helped to solicit for responses which were more likely to reflect the full richness and complexity of views held by respondents (Denscombe, 2007).

On the other hand, according to Fraenkel and Wallen (2000) close-ended questionnaires were known to provide control over the participants' range of responses by providing specific response alternatives. This made it easier to analyze and summarize the responses that were close-ended. Moreover, it facilitated the interpretation of data by standardizing alternative responses. The questionnaire contained thirty-three set of questions divided into nine sections which are; biographic data, access to internet, awareness of e-journals, utilization of e-journals, accessibility of e-resources, ease of use, usefulness of electronic resources, problems facing accessibility and utilization of e-journals and suggestions for improved accessibility and utilization of e-journals. The key

themes were the ones related to awareness, accessibility, utilization, problems and suggestions which helped to solicit for responses which answered the research questions of the study. A copy of the questionnaire was attached as part of the appendices.

3.5 Pre-Testing

Pre-testing is the administration of the data collection instrument with a small set of respondents from the population for the full scale survey. If problems occur in the pre-test, it is likely that similar problems will arise in full-scale administration (OAC, 2007). Pre-testing identifies problems with the data collection instrument and finds possible solutions. It is important to test an instrument in order to establish its face validity and to improve the questions, format and the scale (Creswell, 2003).

It is not possible to anticipate all of the problems that would be encountered during data collection. The terms used in the questionnaire may not be understood by respondents and information to be retrieved from documents may not be readily available, hence the need for pre-testing. Pre-testing questionnaire allows adjustments to be made before full-scale administration of the instrument, helping to ensure that standardized procedures are adhered to. For the purpose of this study, a pilot study was conducted using 20 academic staff from the Ghana Baptist University College, Kumasi and Christ Apostolic University also in Kumasi. The researcher used the institutions under study because of proximity and time constraints. They also have similar structures like GCUC and CSUC. According to Bentil (2011) pre-test helps to identify and eliminate ambiguous questions and

duplications. After the pre-test, few vague questions were rephrased to be clearer to the respondents which enabled quality responses to be solicited for from the respondents.

3.6 Validity and Reliability of instrument

The quality of research is normally determined by the reliability and validity of the methodology and data. Paton (2001) found validity and reliability as the two major factors that researchers should be concerned about while designing a study, analysing the results and judging the quality of data. Trochim (2005) posits that validity attempts to address the extent or degree to which a research has measured what is has been purported to measure. This means that, there are no logical errors when drawing conclusion from the data (Ghauri & Grohaug, 2005).

Most of the constructs used in the research instrument were logically linked to the objectives of the study and also goes with sound theory in the literature review in order to ensure face and content validity. Validity of the items in the questionnaire was also ensured by the pre-test conducted by the researcher on people with the same characteristics as the respondents in this study. Leading questions which could distract the instrument from measuring what is intended to measure were also avoided by the researcher.

On the issue of reliability, Neuman (2006) stated that it relates to consistency or dependability. Reliability indicates the likelihood of a given measurement technique that repeatedly yielded similar findings or the same description of the phenomenon. One of the means by which the researcher ensured reliability was the strategy used in selecting

the instrument together with designing and administering the questionnaire. The pre-test also helped to ascertain the dependability of the items in the questionnaire as well as seeking respondents' permission for questionnaire administration.

3.7 Mode of Data Collection

Primary sources of data used for the study was collected using a questionnaire designed based on the objectives of the study. This gave specific responses to the research questions identified. Letters of introduction were taken from the Department of Information Studies and sent to the registrars of GCUC and CSUC to ask for permission to administer the questionnaire to the academics. It took two months to collect the data.

The questionnaire was self-administered by the researcher to the academic staff of GCUC and CSUC with the help of one library staff and one administrative staff from each of the two university colleges under study. The research assistants were duly oriented and the questionnaire was picked-up by hand on a scheduled date. Neuman (2007) observed that, "a researcher must be aware that self-presentation will influence field relations to some degree. It was difficult to present a highly deceptive front or to present oneself in a way that deviates sharply from a study". In the case of part-time academic staff, the questionnaire was administered to them by the trained administrative staff when the lecturers went to complete their time record sheets at their administrative offices after their lecture periods.

3.8 Data Analysis and Presentation

The Statistical Package for Social Sciences (SPSS) was used to analyze the data collected from the respondents. The data was first coded, captured and analyzed. The results are presented showing simple frequencies, charts, percentages, chi-square statistic to test at 0.05 level of significance and cross-tabulations of the responses given by the respondents in the form of tables and graphs. According to Healey (1993 as quoted in Asamoah 2014), SPSS is the most widely used statistical software in the social sciences especially for quantitative study. Quantitative data was employed because of the study used the survey methodology with questionnaire as the main instrument consisting of mostly closed-ended questions.

3.9 Ethical Considerations

According to Fraenkel and Wallen (2000), “all subjects should be assured that, any data collected from or about them would be held in confidence”. The study ensured that all ethical issues bordering confidentiality and anonymity of participants were adhered to. In order to ensure this, no personal information such as name and staff ID was requested from respondents. The University of Ghana’s code of ethics was adhered to. Letters from the Department of Information Studies were taken to seek permission from the administrators of the institutions under study as well as participants.

REFERENCES

- Amekuedee, J. O. (2002). *An evaluation of library automation in some Ghanaian university libraries*. (M.Phil. thesis) Department of Information Studies, University of Ghana, Legon.
- Amoafu, E. A. (2011). *The use of ICT in teaching and learning in the University of Ghana, Legon*. (M.Phil. thesis) Department of Information Studies, University of Ghana, Legon.
- Asamoah, R. (2014). *Use of ICT in teaching and learning in second cycle educational institutions: A comparative study of Labone Senior High School and Ghana International School*. (M. A dissertation) Department of Information Studies, University of Ghana, Legon.
- Babbie, E. (2010). *The practice of social research*, (12thed.). Australia: Wadsworth/Cengage Learning.
- Bentil, W. (2011). *The use of electronic resources in Ghanaian universities: A comparative study of the University of Cape Coast and the Central University College*. (M. Phil thesis) Department of Information Studies, University of Ghana, Legon.
- Bless, C. & Higson-Smith, C. (2004). *Fundamentals of social research methods*, (3rded.). Lusaka: Juta.
- Burns, A. C., & Bush, R. F. (2010). *Marketing research*, (6th ed.). Upper Saddle River, N. J.: Pearson/Prentice-Hall.
- Busha, C. H., Harter, S. P. (1980). *Research methods in librarianship: Techniques and interpretation*. New York: Academic Press.

- Creswell, J. (2003). *Research design: Qualitative, quantitative and mixed method approach*. (3rded.). London: Sage Publications.
- Denscombe, M. (2007). *The good research guide for small-scale social research projects*. Maidenhead, England: Open University Press.
- Fraenkel, J. R., & Wallen, N.E. (2000). *How to design and evaluate research in education*, (4thed.). Boston: McGraw- Hill.
- Ghauri, P., & Gronhaug, K. (2005). *Research methods in business studies: A practical guide*, (3rded.). New Jersey: Prentice Hall/Financial Times.
- Gorard, S. (2013). *Research design: Creating robust approaches for the social sciences*. Retrieved on 15/04/15 from: www.nova.edu/ssss/qr/qr18/clancy26.pdf.
- Healey, J. (1993). *Statistics: A tool for social research*, (3rded.). Belmont, CA: Wadsworth.
- Hsu, C., & Sandford, B. (2010). *Instrumentation*. In Neil J. Salkind (Ed.), *Encyclopedia of research design*. Thousand Oaks, CA: SAGE Publications.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Delhi: Wiley Eastern Limited.
- Kumekpor, T. K. B. (2002). *Research methods and techniques of social research*. Accra: SonLife Services.
- Neuman, W. L. (2006). *Social research methods: Qualitative and quantitative approaches*, (6thed.). Boston: Pearson.
- Neuman, W. L. (2007), *Basics of social research: qualitative and quantitative approaches*, (7thed.). Boston: Pearson Education.

Office of the Auditor-General of Canada (OAC), (2007). *Conducting Surveys, pretesting data collection instrument*. Available at http://www.oag-bvg.gc.ca/internet/English/meth_gde_e_19734.html. Accessed on 15/10/2014.

Paton, M. Q. (2002). *Qualitative evaluation and research methods*, (3rd ed.). Thousand Oaks, CA: Sage Publication.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*, (5th ed.). Harlow: Prentice Hall/Financial Times.

Trochim, W. T. (2001). Sampling. Retrieved on 12/01/15 from <http://www.apdip.net/publications/iespprimers/eprimer-edu.pdf>.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF RESULTS

4.1 Introduction

This chapter analyses data collected from the survey by questionnaire and the presentation of results of the study. It analyses the data with regard to the objectives of the study. The results have been presented in tables showing frequencies, percentages, cross-tabulation and a test of chi-square of responses given by respondents. A total of 187 copies of one questionnaire were distributed to respondents however, 178 copies of questionnaire were returned and found valid for analysis. This indicates a response rate of 95%. Babie (2005) stated that for a survey, a response rate of fifty percent (50%) is adequate for analysis and reporting. He further stated that a response rate of sixty percent (60%) is good while that of seventy percent (70%) is very good. The response rate of ninety-five percent (95%) as stated above therefore fell within the accepted domain proposed by Babie (2005). The chapter has been organized under the following sub-headings:

- ✓ Background information about respondents of both University Colleges
- ✓ Awareness of scholarly electronic journals
- ✓ Utilization of scholarly electronic journals
- ✓ Accessibility of scholarly electronic journals
- ✓ Factors influencing accessibility and utilization of scholarly electronic journals
- ✓ Problems affecting accessibility and utilization of scholarly electronic journals

4.2 Background Information about respondents of both University Colleges

Data was gathered on the background of respondents in order to determine how ultimately it will influence the use of scholarly electronic journals. The background information included gender, age, and department of respondents. These have been presented in the following sub-headings.

4.2.1 Gender

Gender was relevant to the study as earlier researches showed that it influenced the patronage of electronic journals (Funmilayo, 2013). It was against this background that the respondents in the study were asked to indicate their gender. Table 4.1 depicts the gender distribution of the respondents.

Table 4.1: Gender Distribution

Gender				Total
		GCUC	CSUC	
Male	Frequency	71	66	137
	Percentage (%)	82.6	71.7	77.0
Female	Frequency	15	26	41
	Percentage (%)	17.4	28.3	23.0
Total	Frequency	86	92	178
	Percentage (%)	100.0	100.0	100.0

Source: Field data, 2015.

Out of 86 respondents from GCUC, 71 representing 82% were males and the remaining 15 representing 17.4% were females. Also, out of 92 respondents from CSUC, 66 representing 71.7% were males while the remaining 26(28.3%) were females. The results show that, majority of the respondents from GCUC were males just like those from CSUC and there were more female respondents from CSUC than those from GCUC. On

the whole, male respondents dominated the response. Msagati (2014) and Tajafari (2014) also found that male respondents formed a higher proportion of academic staff members.

4.2.2 Age

The age of the respondents was of importance to the study as Kumar and Grover (2007) noted that it influences the use of electronic resources. As a result, respondents were asked to indicate their age range to determine its influence on e-journal usage. Table 4.2 captures the results as follows.

Table 4.2: Age distribution of Respondents

Age		GCUC	CSUC	Total
20-29 years	Frequency	10	11	21
	Percentage (%)	11.6	12.0	11.8
30-39years	Frequency	37	21	58
	Percentage (%)	43.0	22.8	32.6
40-49years	Frequency	26	39	65
	Percentage (%)	30.2	42.4	36.5
50-59years	Frequency	7	16	23
	Percentage (%)	8.1	17.4	12.9
60years and above	Frequency	6	5	11
	Percentage (%)	7.0	5.4	6.2
Total	Frequency	86	92	178
	Percentage (%)	100.0	100.0	100.0

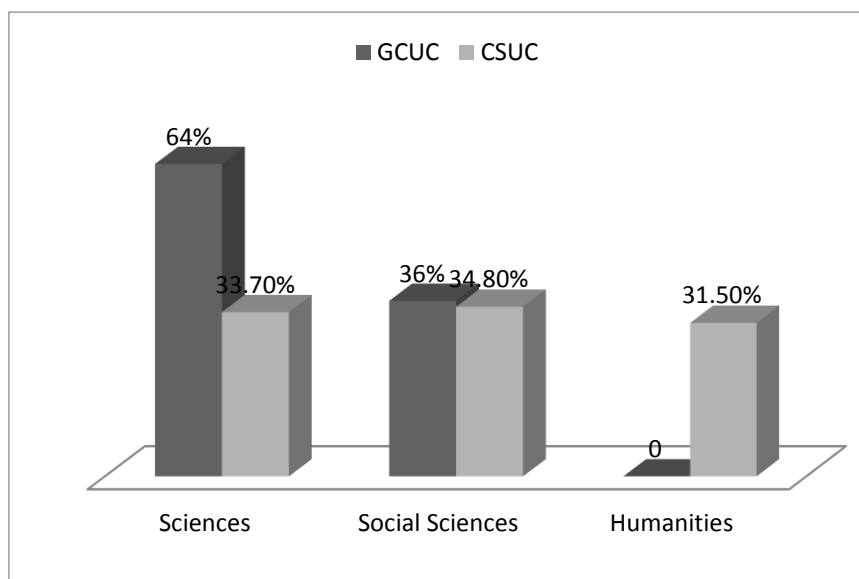
Source: Field data, 2015.

Within GCUC, as shown in Table 4.2, the 30-39 age range recorded the highest number which was 37 out of a total of 86 representing 43% of the respondents followed by the 40-49 age group which was 26(30.2%). On the other hand, findings from CSUC showed that the highest number of respondents was recorded by the 40-49 age group which was 39 out of a total of 92 representing 42.4% followed by the 30-39 age group with 21(22.8%). The elderly academic staff from GCUC and CSUC recorded the least number

of respondents being 6(7%) and 5(5.4%) respectively. It can therefore be said that majority of the respondents from both institutions were young adults. Malemia (2014) likewise, found from a study on the use of electronic journal articles by academics at Mzuzu University, Malawi that most of the respondents were within the ages of 31-40years and least was of the ages of 61 and above.

4.2.3 Discipline of Respondents from both University Colleges

Research has found that differences in the discipline of respondents affect one's usage of scholarly electronic journals (Atakan et al., 2008; Wu & Chen, 2012; Kumar and Grover, 2007). A number of departments were captured in the study from the two university colleges but for the purposes of comparison, they were grouped under three major categories which are Humanities, Social Sciences and the Sciences. For GCUC, Nursing, Midwifery, Medical Laboratory, Physician Assistantship Studies and Computer Science were put under the Sciences whilst Business was put under Social Sciences. Library was also categorized under Humanities. In the case of CSUC, Nursing and Computer Science were put under the Sciences whilst Business and Communication Studies were subsumed under Social Science. Theology, Community Development, Library and Graduate Studies were also grouped under Humanities. The respondents were asked to indicate the department to which they belong. Figure 4.1 below shows the percentages of respondents in each category.

Figure 4.1: Discipline of Respondents from GCUC and CSUC

Source: Field data, 2015.

In GCUC, 64% of respondents were from the sciences and 36% from the social sciences. GCUC offers no programme in the humanities. Compared to CSUC, 33.7% of respondents were from the Sciences, 34.8% from the social science and 31.5% from the humanities. This means that, there were far more respondents from the sciences in GCUC than all the other categories both in GCUC and CSUC. The sciences dominated the study followed by the social sciences and then the humanities which confirms Wu and Chen (2012) assertion that the humanities perceive e-resources to be less important in comparison to users from other disciplines.

4.3 Awareness of Scholarly Electronic Journal Services

To ensure effective awareness of any kind of service, adequate publicity methods should be put in place. Hence the need to find out the extent of publicity and awareness levels of

e-journals in the two university colleges which would eventually affect accessibility and utilization levels.

4.3.1 Awareness of Scholarly Electronic Journal Services at the Libraries

It is very important that awareness of a service is created in order to promote the patronage of such a service. Services that are patronized could not have been so if the targeted audience were not aware of them. Malemia (2014) indicated that, usage of e-journals is enhanced where awareness levels are high and training is provided. Kwadzo (2015) and Whittaker (1993) also emphasized on the importance of awareness creation in user services. It is as a result of this that respondents were asked to indicate their level of awareness of electronic journal services provided by the libraries in their respective university colleges. Table 4.3 shows the awareness of scholarly electronic journals.

Table 4.3: Awareness of Scholarly Electronic Journals

Awareness				Total
		GCUC	CSUC	
Yes	Frequency	55	52	107
	Percentage (%)	64.0	56.5	60.1
No	Frequency	31	40	71
	Percentage (%)	36.0	43.5	39.9
Total	Frequency	86	92	178
	Percentage (%)	100.0	100.0	100.0

Source: Field data, 2015.

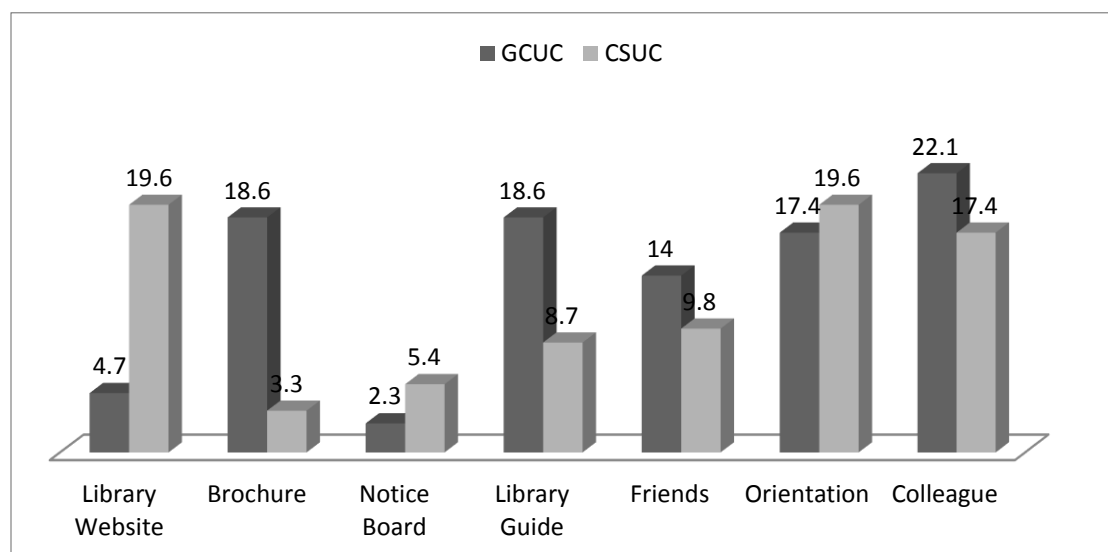
From table 4.3, 64% of respondents from GCUC were aware of scholarly electronic journals at the library as against 36% who were not aware. In the case of CSUC, 56.5% of respondents were aware whilst 43.5% were not. Comparatively, more respondents were aware of electronic journals in GCUC than those in CSUC though awareness for

both institutions was relatively fair. Nisha and Ali (2013) reported of similar results in their study on awareness and use of e-journals by IIT Delhi and Delhi University library users in India.

4.3.2 Publicity of Electronic Journals

It is important to ensure that good methods of publicity are put in place in order to enhance patronage of scholarly electronic journals. Respondents were asked of how they got to know of the existence of scholarly electronic journals at their respective libraries. Figure 4.2 below gives a breakdown of the responses.

Figure 4.2: Publicity of Scholarly Electronic Journals in GCUC and CSUC



Source: Field data, 2015.

As shown in Figure 4.2, among the methods of creating awareness or publicizing scholarly electronic journals in GCUC, spreading the information by word of mouth among colleagues was the most used with a percentage of 22.1. This was followed by

brochure and Library Guide each of which had 18.6% with the least used method being the Notice Board. On the other hand, Library Website and Orientation in CSUC proved to be the most used method with a score of 19.6% each and the least used method was Brochure with only 3.3%. This is an indication that there is the need to intensify publicity through the different media available in the two university colleges. Low publicity therefore accounts for the low level of awareness recorded.

4.4 Accessibility of Scholarly Electronic Journals

Accessibility for users is one of the most important issues in determining the use of information sources such as e-journals. Progressively, librarians who acquire e-journals are becoming aware of the need to urgently consider accessibility issues. Access to e-journals facilitates teaching, learning, research, and development (Khan et al. 2009). Therefore, as an objective of the study, comparison on the extent of accessibility of scholarly electronic journals was made between respondents from GCUC and CSUC.

4.4.1 Access of Scholarly Electronic Journals

There are various ways by which respondents have learnt to access e-journals and it will be in the interest of GCUC and CSUC libraries to know these access methods in order to come up with better access strategies and training for the academics of both university colleges to facilitate easy access to the rich e-journal contents. As a result, respondents who used scholarly electronic journals were asked to indicate how they had learnt to access scholarly electronic journals.

Table 4.4: Access of Scholarly E-journals by Respondents

Method of learning			
		GCUC	CSUC
Trial and error	Frequency	29	40
	Percentage (%)	33.7	53.3
Guidance from library staff	Frequency	36	17
	Percentage (%)	41.9	22.7
Guidance from colleagues	Frequency	21	18
	Percentage (%)	24.4	24.0
Total	Frequency	86	75
	Percentage (%)	100.0	100.0

Source: Field data, 2015.

It can be observed from Table 4.4 that in GCUC, 36 out of 86 respondents representing 41.9% learnt to access scholarly electronic journals through guidance from library staff. Also, 29(33.7%) of the respondents learnt it by trial and error and 21(24.4%) learnt to access e-journals by way of being guided by their colleagues. When compared to the respondents from CSUC, as many as 40(53.3%) out of a total number of 75 respondents who answered this question learnt to access scholarly electronic journals through trial and error while 18(24%) of them learnt by receiving guidance from colleagues and also 17(22.7%) of these respondents learnt to access e-journals by guidance from library staff. It could then be concluded that respondents from both university colleges either had little or no training whatsoever which does not encourage accessibility of e-journals in any way.

4.4.2 Frequency of E-Journal Training in GCUC and CSUC

Training is one of the ways in which skills needed to use e-journals can be acquired. It is very critical to the use of electronic journals as it enables easy access to the rich contents of e-journals. Respondents were therefore asked a question on the frequency of training on scholarly electronic journals given to them by the libraries of the two university colleges. The results are indicated in Table 4.5 below.

Table 4.5: Frequency of E-Journal Training

Frequency of Training				Total
		GCUC	CSUC	
Once a while	Frequency	7	7	14
	Percentage (%)	8.1	7.6	7.9
Not at all	Frequency	43	62	105
	Percentage (%)	50.0	67.4	59.0
Not sure	Frequency	36	23	59
	Percentage (%)	41.9	25.0	33.1
Total	Frequency	86	92	178
	Percentage (%)	100.0	100.0	100.0

Source: Field data, 2015.

From Table 4.5, it could be seen that, half of the respondents from GCUC, that is, 43(50%) said no training whatsoever had been given to them on scholarly electronic journals while 36(41.9%) of them said they were not sure of any such training. Just about 7(8.1%) of them said they had had training once in a while on e-journals. Comparatively, 62(67.4%) of respondents from CSUC said they had not had training on e-journals, 23(25%) said they were not sure of having had such a training and 7(7.6%) also said that they are given training once in a while on electronic journals. The impression one gets

from this analysis is that, the libraries of the two institutions hardly provide training on scholarly electronic journals for academic staff in these institutions.

4.4.3 Level of Proficiency in the Use of Scholarly Electronic Journals

Proficiency of respondents in the use of scholarly electronic journals tells of their competency, ability or skill in accessing and using these e-journals. A question was asked to solicit for information from respondents on their level of proficiency in the use of scholarly electronic journals and the responses are shown in Table 4.6 below:

Table 4.6: Level of Proficiency of Respondents

Proficiency level				Total
		GCUC	CSUC	
Highly proficient	Frequency	19	14	33
	Percentage (%)	22.1	15.2	18.5
Proficient	Frequency	29	37	66
	Percentage (%)	33.7	40.2	37.1
Moderately proficient	Frequency	25	32	57
	Percentage (%)	29.1	34.8	32.0
Quite proficient	Frequency	4	6	10
	Percentage (%)	4.7	6.5	5.6
Not proficient	Frequency	9	3	12
	Percentage (%)	10.5	3.3	6.7
Total	Frequency	86	92	178
	Percentage (%)	100.0	100.0	100.0

Source: Field data, 2015.

As indicated in Table 4.6, 29(33.7%) out of a total of 86 respondents from GCUC were found to be proficient in the use scholarly electronic journals while 25(29.1%), 19(22.1%), 9(10.5%) and 4(4.7%) were found to be moderately proficient, highly

proficient, not proficient and quite proficient respectively. As compared to the respondents from CSUC, 37(40.2%) out of a total of 92 proficient users of scholarly electronic journals were found. Thirty-two of the remaining number representing 34.8% were also found to be moderately proficient while 14(15.2%), 6(6.5%) and 3(3.3%) were also found to be highly proficient, quite proficient and not proficient respectively. It could therefore be inferred that, majority of the respondents had competencies and skills in scholarly electronic journals to an appreciable level.

4.5 Utilization of Scholarly Electronic Journals

One of the objectives of the study was to compare the extent of utilization of scholarly electronic journals in GCUC and CSUC. In order to derive the maximum benefits from resources like e-journals, effective and efficient utilization is required. Optimum utilization also helps to justify the amount of money and other resources invested in such resources. As a result, comparing the extent of utilization of e-journals in the two university colleges was very important.

4.5.1 Use of Scholarly Electronic Journals

Use is a very important factor to be considered when it comes to the issue of scholarly electronic journals. Weiner (2003) pointed out that universities pay huge sums of money to acquire electronic journals on a large scale for faculty members but they do not use them in the same scale. Therefore, as one of the objectives of the study, respondents were asked if they used scholarly electronic journals provided by the libraries of their respective university colleges.

Table 4.7: Use of Scholarly Electronic Journals by Respondents

E-Journal Usage				Total
		GCUC	CSUC	
Yes	Frequency	58	57	115
	Percentage (%)	67.4	62.0	64.6
No	Frequency	28	35	63
	Percentage (%)	32.6	38.0	35.4
Total	Frequency	86	92	178
	Percentage (%)	100.0	100.0	100.0

Source: Field data, 2015.

It could be seen from Table 4.7 that 58(67.4%) of respondents from GCUC used scholarly electronic journals provided by the university college library as against 28(32.6%) who are non-users. Comparing this to CSUC, 57(62%) of the respondents used scholarly e-journals provided by the university college library while 35(38%) did not use them. This prompts the need to employ all available resources and means to encourage and promote e-journal use in both university colleges.

4.6 Problems Associated with Accessing and Utilizing Scholarly Electronic Journals

Accessing and using e-journals has never been without problems. Hence, this section looks at problems academic staff from both institutions face in accessing and utilizing scholarly electronic journals. Table 4.8 presents the results:

Table 4.8: Problems in Using Scholarly Electronic Journals by Respondents

Limitations		GCUC	CSUC
Information overload	Frequency	35	46
	Percentage (%)	40.7	50.0
Lack of searching skills	Frequency	28	34
	Percentage (%)	32.6	37.0
Lack of time for searching	Frequency	41	28
	Percentage (%)	47.7	30.4
Inadequate networked computers	Frequency	30	22
	Percentage (%)	34.9	23.9
Power cuts	Frequency	58	58
	Percentage (%)	67.4	63.0
Non-availability of required information	Frequency	6	22
	Percentage (%)	7.0	23.9
Slow network	Frequency	70	68
	Percentage (%)	81.4	73.9
Unstable network	Frequency	72	57
	Percentage (%)	83.7	62.0

Source: Field data, 2015.

As seen in Table 4.8, the major problems encountered by the academic staff of GCUC in using scholarly electronic journals are unstable network, slow network and power cuts with frequencies and percentages of 72(83.7%), 70(81.4%) and 58(67.4%) respectively. Similarly, academic staff of CSUC encounter the same limitations of slow network, power cuts and unstable network in their use of scholarly electronic journals with frequencies and percentages of 68(73.9%), 58(63%) and 57(62%) respectively.

4.7 Factors that Influence Accessibility and Use of Scholarly Electronic Journals

Certain factors influence access and use of scholarly electronic journals and these include gender, age, differences in discipline, educational level, awareness and computer skills.

4.7.1 Factors that Influence Access and Use of E-Journals

Respondents were asked to indicate factors that influence accessibility and use of e-journals and the results are presented in Table 4.9.

Table 4.9 Factors that Influence Access and Use of E-Journals

Factors		GCUC	CSUC
Awareness	Frequency	75	83
	Percentage (%)	26.8	30.3
Information searching skills	Frequency	50	57
	Percentage (%)	17.9	20.8
Gender	Frequency	21	28
	Percentage (%)	7.5	10.2
Differences in discipline	Frequency	40	35
	Percentage (%)	14.3	12.8
Age	Frequency	20	49
	Percentage (%)	7.1	17.9
Educational level	Frequency	38	22
	Percentage (%)	13.6	8.0

Source: Field data, 2015.

The most prominent factors identified by respondents from GCUC to access and use of e-journals were awareness (26.8%), information searching skills (17.9%), and differences in discipline (14.3%), (Table 4.9) whereas respondents from CSUC said that

awareness(30.3%), information searching skills (20.8%), and age (17.9%) were the major factors that affect e-journal access and use (Table 4.9).

4.7.2 Gender and Use of Scholarly Electronic Journals

Several arguments have been made on the issue of gender as a factor in examining the use of electronic journals. One aspect of the argument is that gender has effect on the use of electronic journals and that male users use more electronic journals than their female counterparts (Bamidele, Omeluzor, and Amadi 2011). The other side argues that gender has no effect on the use of electronic journals (Tahiret al., 2010). To show the relationship between “gender” and “use” of electronic journals, these were cross-tabulated.

Table 4.10: Relationship between Gender and Use of Scholarly E-Journals

N = 178			Use of Scholarly Electronic Journals		Total
			Yes	No	
Gender	Male	Frequency	91	46	137
		Percentage (%)	79.1	73.0	77.0
	Female	Frequency	24	17	41
		Percentage (%)	20.9	27.0	23.0
Total	Frequency		115	63	178
	Percentage (%)		100.0	100.0	100.0
Chi-square 0.354			P-value = 0.858		Level of significance = 0.05

Source: Field data, 2015.

As shown in the table, when gender and use were cross-tabulated to find out if any relationship exists between the two variables, the results showed that there is no statistically significant relationship between them at a p-value of 0.858 which is greater

than the significant level of 0.05. The conclusion therefore is that, there is no relationship between gender and use even though there is a difference between usages in males 91(79.1%) and the females 24(20.9%). The difference is insignificant and therefore cannot be justified by gender. Other factors such as lack of access and training as well as awareness might have accounted for this. The gender difference in e-resources usage appears negligible.

4.7.3 Age and Use of Scholarly Electronic Journals

Like gender, some arguments have come up on “age” being a determining factor in the use of electronic journals. One of the arguments is that, older generations may not have had much exposure to computers thereby increasing their computer anxiety (techno-stress) which ultimately leads to their lower level of use of electronic journals (Erdamar and Demirel, 2014). Another argument is that age has no effect on use of electronic journals and that given similar computer exposure, age does not make a difference in people’s comfort levels with computers or electronic journals (Borrego et al., 2012). With regard to these arguments, the ages of the respondents were cross-tabulated against use of electronic journals in GCUC and CSUC to determine their relationship.

Table 4.11: Relationship between Age and Use of Scholarly Electronic Journals

N =178		Use of Scholarly Electronic Journals		Total
		Yes	No	
Age 20-29 years	Frequency	17	4	21
	Percentage (%)	14.8	6.3	11.8
30-39years	Frequency	36	22	58
	Percentage (%)	31.3	34.9	32.6
40-49years	Frequency	38	27	65
	Percentage (%)	33.0	42.9	36.5
50-59years	Frequency	14	9	23
	Percentage (%)	12.2	14.3	12.9
60 years and above	Frequency	10	1	11
	Percentage (%)	8.7	1.6	6.2
Total	Frequency	115	63	178
	Percentage (%)	100.0	100.0	100.0
Chi-square0.128 P-value = 7.159 Level of significance = 0.05				

Source: Field data, 2015.

It can be observed from Table 4.10 that, when “age” and “use” were tested to find out if any relationship exists between the two variables, the results showed that there is no relationship between them at a p-value of 7.159 which is greater than the significant level of 0.05. The 40-49years age group surprisingly recorded the highest number and percentage of use 38(33%) as against 17(14.8%) recorded by the 20-29years group who were thought to be a younger generation with more skills and interest in computing or electronic journals. This goes to buttress the point that, age has no effect on electronic journal use.

4.7.4 Differences in Discipline and Use of Scholarly Electronic Journals

Some research works including Wu and Chen (2012) and Atakan et al. (2008) have indicated that differences in disciplines have a bearing on the use of electronic journals. They intimated that, there are variations in the use of electronic journals among humanities, social sciences and science scholars. As a result, disciplines of respondents were matched against their use of e-journals.

Table 4.12: Relationship between Discipline and Use of Scholarly E-journals

N=178			Use of Scholarly Electronic Journals		Total
			Yes	No	
Discipline	Sciences	Frequency	54	32	86
		Percentage (%)	47.0	50.8	48.3
	Social Science	Frequency	42	21	63
		Percentage (%)	36.5	33.3	35.4
	Humanities	Frequency	19	10	29
		Percentage (%)	16.5	15.9	16.3
Total	Frequency	115	63	178	
	Percentage (%)	100.0	100.0	100.0	
Chi-square 0.128			P-value = 7.159		Level of significance = 0.05

Source: Field data, 2015.

From Table 4.11, one can observe that respondents from the sciences used more electronic journals, that is, 54(47%) than the social sciences 42(36%) and the humanities 19(16.5%). That notwithstanding, a test of the relationship between discipline and use at revealed that there is no relationship between them at a p-value of 7.159 which is greater than the significant level of 0.05.

4.7.5 Educational level and Use of Scholarly Electronic Journals

Educational level measures individual's intellectual development and according to research this is expected to influence people's use of electronic journals. That is, a user's level of education as identified by Abdullah (2000), Bjork and Turk (2000) and Ellison (2001) is one of the factors that can affect his or her usage of electronic journals. For this reason, "level of education" was cross-tabulated against "use" in order to identify any relationship that exists between them.

Table 4.13: Relationship between Educational Level and Use

N =178			Use of Scholarly Electronic Journals		Total
			Yes	No	
Level of Education	First degree	Frequency	15	4	19
		Percentage (%)	13.0	6.3	10.7
	Masters	Frequency	89	54	143
		Percentage (%)	77.4	85.	80.3
	PhD	Frequency	7	2	9
		Percentage (%)	6.1	3.2	5.1
	City & Guilds	Frequency	1	1	2
		Percentage (%)	.9	1.6	1.1
	ACCA	Frequency	1	2	3
		Percentage (%)	.9	3.2	1.7
	Post-Graduate Diploma	Frequency	2	0	2
		Percentage (%)	1.7	.0	1.1
Total	Frequency	115	63	178	
	Percentage (%)	100.0	100.0	100.0	
Chi-square 0.379 P-value = 5.308 Level of significance = 0.05					

Source: Field data, 2015.

It could be seen from Table 4.12 that respondents with master's degree 89(77.4%) used more electronic journals than those with other qualifications followed by first degree 15(13%) and doctorate 7(6.1%) holders in that order. The lowest usage was recorded by the ACCA 1(0.9%) and City and Guilds 1(0.9%) certificates holders. However, in testing for the relationship between the level of education and use of journals, p-value of 5.308 showed that there was no statistically significant relationship between because the p-value of 5.308 is greater than the significant level of 0.05.

4.7.6 Awareness and Use of Scholarly Electronic Journals

Awareness is a very important factor in using scholarly electronic journals as one cannot use the e-journals when one is not aware of their existence. To encourage or promote efficient and effective use of electronic journals, there is the need to first and foremost create full awareness of resources. That is to say that, when library users are informed about the services provided, it is very likely to have an effect on use. As a result, awareness was cross-tabulated against use to find out if any relationship exists between the two variables.

Table 4.14: Relationship between Awareness and Use

N=178			Usage of Scholarly Electronic Journals		Total
			Yes	No	
Awareness	Yes	Frequency Percentage (%)	80 69.6	43 68.3	123 69.1
	No	Frequency Percentage (%)	35 30.4	20 31.7	55 30.9
Total		Frequency Percentage (%)	115 100.0	63 100.0	178 100.0
Chi-square = 0.856 P-value = 0.033 Level of significance = 0.05					

Source: Field data, 2015.

Eighty 80(69.6%) respondents were aware and also used the scholarly electronic journals provided by GCUC and CSUC libraries while 35(30.4%) used scholarly electronic journals which they were not aware could be obtained from the libraries. Again, 43(68.3%) of the respondents were aware of the availability of electronic journals at the libraries but did not use them while 20(31.7%) of them were neither aware nor used these e-journals (see Table 4.13). Probability value (p-value) of 0.033 indicated that the relationship between awareness and use was statistically significant because the p-value of 0.033 is less than the significant level of 0.05.

4.7.7 Computer Skills and Use of Scholarly Electronic Journals

To be able to access and utilize electronic resources and e-journals effectively, one needs to acquire computer skills. Some researchers are of the view that having knowledge in the use of computers or not can affect the use of electronic journals. For example, Ansari

(2010) posits that there is a direct relationship between computer literacy and use of electronic resources. Therefore, computer skills or computer knowledge of respondents was cross-tabulated against use of scholarly electronic journals to find out the relationship that exists between them as depicted in Table 4.14.

Table 4.15: Relationship between Computer Skills and Use

N = 178			Usage of Scholarly Electronic Journals		Total
			Yes	No	
Computer Skills	Beginner	Frequency	10	8	18
		Percentage (%)	8.7%	12.7%	10.1%
	Intermediate	Frequency	54	32	86
		Percentage (%)	47.0%	50.8%	48.3%
	Advanced	Frequency	51	23	74
		Percentage (%)	44.3%	36.5%	41.6%
Total	Frequency	115	63	178	
	Percentage (%)	100.0%	100.0%	100.0 %	
Chi-square = 1.371 P-value = 0.504Level of significance = 0.05					

Source: Field data, 2015.

Respondents with intermediate computer skills are 54(47%). This is followed (as seen in Table 4.14) by those with advanced knowledge in computing with 51(44.3%) and the last in the group is beginners in computing with 10(8.7%). One can therefore say that, the respondents were people with an appreciable knowledge in computing. However, the cross-tabulation between computer skills and use revealed that there is no relationship between them at a p-value of 1.371 which is greater than significant level of 0.05. The conclusion is that, the fact that respondents had good computer skills did not guarantee use of scholarly electronic journals.

4.8 Findings and the Theoretical Framework

In relating the findings to the Diffusion of Innovations (DOI) theory, Rogers (2003) indicated that innovation being a new idea, practice or object is communicated to the members of a social system through channels such as knowledge, persuasion, decision, and implementation. In this case, e-journals are the innovation, the social system becomes GCUC and CSUC while members of the social system are the academic staff of the two institutions. E-journals were communicated to the academic staff through knowledge (awareness) and they are persuaded by their usefulness, compatibility, relative advantage and complexity of these e-journals. Based on that, a decision to accept and use e-journals was made. The prevalent characteristics found were fair level of awareness and use and the less visible ones were unstable and slow network as well as unreliable power supply which hindered accessibility and therefore the acceptance and adoption of e-journals as found in DOI.

REFERENCES

- Abdullah, S. A. (2000). *Factors affecting international students use of the online catalogues and other information sources*. (A Doctoral dissertation submitted to the Florida State University). *Dissertations Abstract International*, 61, 1663.
- Atakan, C., Atilgan, D., Bayran, O., & Arslantekin, G. (2008). An evaluation of the second survey on electronic databases usage at Ankara University digital library. *The Electronic Library*, 26(2), 249-259.
- Babie, E. (2005). *The basics of social research*, (3rded.). Belmont: Thomson Wadsworth.
- Bamidele, I. A., Omeluzor, S. U., & Amadi, H. U.(2013).Utilization of journal publications by undergraduate students of Babcock University, Nigeria. *Library Philosophy and Practice (e-journal)*.Paper 1006. Retrieved on 24/04/15 from: <http://digitalcommons.unl.edu/libphilprac/1006>
- Bjork, C. B. & Turk, Z. (2000). *A survey on the impact of the internet on scientific publishing in construction of IT and construction management*. Accessed on 16/02/15 from: www.itan.org/2000/5.
- Borrego, A., Anglada, L., Barrios, M. & Garcia, F. (2012). Use and availability of scholarly journals in Catalan academic libraries. *Serials Review*, 38, 243-249.
- Ellison, J. (2001). *E-commerce: Household shopping on the internet*. The Daily, 23rd October, 2011. Accessed on 23/02/15 from: www.statcan.gc.ca/daily-quotidien/dq011023b-eng.html.

- Erdamar, G., & Demirel, H. (2014). Electronic source preferences of education faculty staff: A case study of Gazi University. *European Journal of Research on Education, Special Issue: Educational Technology and Lifelong Learning*, 6-15.
- Funmilayo, D. C. (2013). Gender differences in the use of academic resources: The case of FUTA library. *International Journal of Library and Information Science*, 5(8), 256- 261.
- Kumar, S., & Grover, S. (2007). Electronic journals: Impact on scholarly communication, user and library. *Library Herald*, 45(4), 325-336.
- Kwadzo, G. (2015). Awareness and usage of electronic databases by Geography and Resource Development and Information Studies Graduate Students in the University of Ghana. *Library Philosophy and Practice (e-journal)*. Paper 1210. Retrieved on 23/03/15 from: <http://digitalcommons.unl.edu/libphilprac/1210>.
- Malemia, L. (2014). The use of electronic journal articles by academics at Mzuzu University, Malawi. *Library Philosophy and Practice (e-journal)*. Paper 1097. Retrieved on 02/03/15 from: <http://digitalcommons.unl.edu/libphilprac/1097>
- Montgomery, C. H. & King, D. W. (2002). Comparing library and user related costs of print and electronic journal collections: A first step towards a comprehensive analysis. *D-Lib Magazine*, 8(10). Accessed on 10/03/15 from: www.dlib.org/october02/montgomery/10montgomery.htm.
- Msagati, N. (2014). Awareness and use of scholarly electronic journals by members of academic staff: A case study of Dar es Salaam University College of Education (DUCE). *Library Philosophy and Practice, (e-journal)*. Paper 1124. Retrieved on 14/11/14 from: <http://digitalcommons.unl.edu/libphilprac/1124>

- Nisha, F., & Ali, N. P. M. (2013). Awareness and use of e-journals by IIT Delhi and Delhi University library users. *Collection Building*, 32(2), 57-64.
- Tahir, M., Mahmood, K. & Shafique, F. (2010). Use of electronic information resources and facilities by humanities scholars. *The Electronic Library*, 28(1), 122-136.
- Tajafari, M. (2014). Accessibility and use of electronic journals at Iranian university libraries. *Library Philosophy and Practice (e-journal)*. Paper 1135. Retrieved on 12/03/15 from: <http://digitalcommons.unl.edu/libphilprac/1135>
- Vasishta, S. (2013). Dissemination of electronic journals: A content analysis of the library websites of technical university libraries in North India. *Electronic Library*, 31(3), 278-289.
- Weiner, S. G. (2003). Resistance to change in libraries: Application of communication theories. *Libraries and Academy*, 3(1), 69-78.
- Whitakker, K. (1993). *The basics of library-based user services*. Michigan: Library Association.
- Wu, M. & Chen, S. (2012). How graduate students perceive, use and manage electronic resources. *Aslib Proceedings: New Information Perspectives*, 64(6), 641-652.

CHAPTER FIVE

DISCUSSION OF MAJOR FINDINGS

5.1 Introduction

This chapter discusses the major findings of the study in relation to the research objectives and the existing literature. It is presented under the following headings: awareness of scholarly electronic journal services; accessibility of scholarly electronic journals; utilization of scholarly electronic journals; usefulness of scholarly electronic journals; problems affecting accessibility and utilization of scholarly electronic journals; factors influencing accessibility and utilization of scholarly electronic journals.

5.2 Awareness of Scholarly Electronic Journal Services

The importance of awareness creation in accessibility and utilization of scholarly electronic journals cannot be overemphasized. When the academics are aware of the available e-journals they will be motivated to use them (Kwadzo, 2015). Malemia (2014) also stated that higher awareness level encourages usage of e-journals. It is against this backdrop that Whittaker (1993) placed much emphasis on awareness creation of services especially in user services. The study found that, awareness of scholarly electronic journals among the academic staff of both GCUC and CSUC was relatively high (that is, GCUC 64% and CSUC 56.5%). This was quite surprising because GCUC for instance, has been a member of the Consortium of Academic and Research Libraries in Ghana (CARLIGH) since 2010 paying a yearly membership and e-journal subscription fee for quite a number of e-journal databases and other resources at the disposal of the consortium members. For this reason, one would expect that awareness among the

university college community especially academic staff would be very high but that was not the case because of inadequate publicity.

CSUC on the other hand provides access to Open Access Journals together with e-journal databases like HINARI, AGORA and the rest for the entire university college. Therefore, awareness was expected to be very high since these electronic journal databases are free on the internet. Money that could be spent on subscription could be channeled into more publicity of these electronic journals.

Anaraki and Babalhavaeji (2013) indicated that where users are not aware of the available e-resources they tend to utilize search engines to satisfy their information needs. The underlying problem for the low level of awareness in the two institutions could be due to ineffective or poor publicity programmes of the libraries of the two institutions. This negatively affects the university colleges as a whole in the area of research work and productivity as the library user or information users could be deprived of the benefits of using e-journals. For example, Manda (2005) reported that resources provided by the Programme for the Enhancement of Research Information (PERI) for academic and research institutions in Tanzania were under-utilized because of lack of awareness resulting from poor publicity. Vasishta (2013) stated that promotion is the determining factor in the efficient use of complicated services like e-journals. He further argued that because e-journals are growing as an emerging information platform, it requires more than just notification to promote them. On the other hand, Swain (2010) also observed

that the interest and exposure that a user has in an electronic journal database could influence his or her awareness of e-journal databases.

However, the findings compare favourably with the views of some researchers such as Bayugo and Agbeko (2007), Shuling (2007) and Ansari (2010) who reported of low levels of awareness of electronic resources in their studies. Similarly, Ercegovic (2009), Manda (2005), and Dadzie (2005) found that respondents were not aware of most of the e-resources available for them in their respective institutions and so that affected their usage. The findings also contradicts other studies by Nisha and Ali, (2013); Kwadzo, (2015); Kwafoa et al., (2014); Chirra and Madhusudhan, (2009), and Atakan *et al*, (2008) who indicated that patrons were highly aware of the e-resources available to them.

5.3 Accessibility of Scholarly Electronic Journals

It was revealed from the study that, most of the academic staff from CSUC learnt to access e-journals by “trial and error”. This was in line with the findings of Sinh and Nhung (2012) and Waldman (2003) who stated that a lot of academics have learnt to access electronic resources on trial and error basis. It therefore suggests that the level of proficiency in computer searching skills among academics at CSUC was very low. E-journal training programmes which could be used to solve the above mentioned challenge was also found to be conducted once in a while for these academics. Comparatively, most of the academic staff from GCUC learnt to access e-journals by being guided by the library staff which is an indication of commitment on the part of the library staff in helping them to have good access to e-journals. This confirms the findings of Kumar and

Reddy (2014) who also found that majority of the scholars were guided by the library staff in learning to access e-journals. However, this could be better handled by organizing proper continuous training programmes on e-journals for the academic staff of GCUC.

On the issue of frequency of training on e-journals, the study found that GCUC and CSUC libraries do not give the academic staff adequate training on scholarly electronic journals despite the importance of training in this regard. This could be one of the contributing factors for the average level of awareness and usage of e-journals in these institutions. Nonetheless, it goes with the findings of Islam, Alam and Sultana (2011) who found that lack of training, orientation programmes, computer skills and awareness accounted for the low usage of e-journals at Dhaka University Library. Sinh and Nhung, (2012) also noted similar findings.

With regard to proficiency in the use of scholarly electronic journals, majority of the academics in GCUC and CSUC were found to be proficient in the use of e-journals. These academics possess adequate skills needed to exploit e-journals effectively but they did not utilize them. This was in contrast with the findings of Ndinoshiho (2010) and Oyedapo and Ojo (2013) who reported of lack of skills. Moreover, majority of the respondents from the two institutions said that it was somehow easy to get the required information use them effectively as indicated by Kumar and Grover (2007).

5.4 Utilization of Scholarly Electronic Journals

According to Kwadzo (2015), it is only proper, appropriate and economical that e-journals are optimally utilized to facilitate the academic achievement of faculty and students and get value for money in addition. However, the findings of the study showed that, academic staff of GCUC and CSUC fairly utilized scholarly electronic journals made available to them by their respective university college libraries. This was as a result of poor education and publicity on importance and uses of e-journals in the two institutions. Reasons given for fair use of e-journals may differ from place to place and also from one situation to another (Kwadzo, 2015). For example, Dukic (2013) and Ahmed (2013) noted that usage of e-resources in advanced countries is higher than in developing countries mainly because of bad infrastructure and high cost of such resources. Msagati (2014) found weak marketing tools and inadequate information literacy programme as reasons for rational use of e-journals. He et al. (2012) noted that users' thought of academic search engines such as Google and CiteSeers as better resources compared to university subscribed e-journals databases such as EBSCO, Emerald, Pubmed and JSTOR. Also, preference for a particular resource will depend on the kind of task to be performed. Cothran (2011) argued that users utilized Google Scholar very often because they found it easy to learn, use and navigate unlike e-resources.

The findings are in line with observations made by some researchers including Anaraki and Bablhavaeji (2013), Baro et al. (2011) and Oyedapo and Ojo (2013) as opposed to the findings of Abdul and Ahmad (2009). Vasishta (2013) also observed that the most

important factor in the efficient use of difficult services like electronic journals is promotion. Poor publicity has affected awareness and ultimately usage thereby putting to waste the huge sum of money invested in the acquisition and maintenance of e-journals in the two institutions. For example, Manda (2005) reported that resources provided by the Programme for the Enhancement of Research Information (PERI) for academic and research institutions in Tanzania were not fully utilized because of lack of awareness resulting from poor publicity.

Besides, the study corroborated that of Weiner (2003) who asserted that universities invest huge sums of money to acquire electronic journals on a large scale for faculty members but they do not use them in the same scale. The study also found that respondents preferred e-journals to print journals but majority of them were interested in using print journals alongside the e-journals for purposes including research report writing, teaching, current awareness, research proposal writing among others as opined by Sethi and Panda (2011).

5.5 Problems Affecting Accessibility and Utilization of Scholarly Electronic Journals

The main hindrances or limitations to the accessibility and utilization of scholarly electronic journals encountered by the academic staff of GCUC as found by the study include unstable network, slow network and power cuts whereas that of CSUC include slow network, power cuts and unstable network. This gives a hint of the fact that academic staff of the institutions under study are not able to access and utilize e-journals at all times because of the problems listed earlier and many others like lack of searching

skills, information overload and limited number of core journals especially for CSUC. Ahmed (2013) found that respondents did not like the subscribed e-journals because of slow download speed, inability to access from home, difficulty in finding required information, poor IT infrastructure, limited access to back issues and online access problems.

Similar findings were reported by Mbabu, Bertram and Varnum (2013) which includes limited number of titles available to the users. Chu and Law (2005) in their studies also mentioned lack of knowledge and search skills as problems encountered in usage of e-resources by users. Further, Shija (2009) and Kwafoa et al., (2014) found that awareness, lack of search skills, poor infrastructure and slow internet speed were the basic reasons for the low patronage of electronic resources. The problem of slow internet speed was also reported by Sahu, Bijay and Mahapatra (2013). The major constraint that hindered respondents from effectively using e-resources as observed by Sethi and Panda (2011) were lack of training for users, inadequate infrastructure, lack of expertise, lack of subscription of foreign journals and lack of budgetary support.

These findings are in support of the reports by researchers including Kinengyere (2007); Manda (2005); Manda and Nawe (2009); Nyika (2006) who posit that low bandwidth, recurrent power outages, among others were largely the attributing factors against the usage of scholarly electronic journals in the library. The findings of lack of searching skills and information overload as limitations or problems compare favourably with assertions of Okello-Obura (2010) and Tahir et al. (2010).

5.6 Factors that Influence Accessibility and Use of Scholarly Electronic Journals

5.6.1 Factors that Influence Access and Use of Scholarly Electronic Journals

The major common factors identified by respondents from the two institutions as very influential in access and use of e-journals were awareness and information searching skills. Nyika, (2006) argued that “low patronage of scholarly electronic journals in the library was largely attributed to lack of information literacy skills among library users” at the Institute of Marine Science, Tanzania. Ansari (2010) reported in a study on the use of electronic journals among academics at the University of Karachi that, low level of awareness accounted for the non-use of e-journals. This finding goes with the studies of Kwafoa et al. (2014) and Okello-Obura (2010) who also reported of awareness and information searching skills as factors affecting e-journals in their studies on e-resources.

5.6.2 Gender and Use of Scholarly Electronic Journals

No statistically significant relationship whatsoever was found to exist between gender and usage of e-journals by the study at GCUC and CSUC though 79.1% of the total respondents from both institutions were males who used e-journals. Conditions or factors other than gender might have accounted for the higher percentage of male usage. For example, Swain (2010) observed that the interest and exposure that a user has in an electronic journal database could influence their usage of the e-journal databases. Manda and Mukangara (2007) also found other variables such as lack of awareness, access and training in e-resources to have positive association with the use of e-resources.

The findings support the views of Tahir et al. (2010) who noted in a study that gender had no effect on the use of e-resources. Ozoemelem (2009) reported a high rate of use of e-resources by both male and female users and concluded that “the gender gap in electronic resources usage appears negligible”. Further, Abd et al. (2011) indicated that the difference in the use of e-resources between male and female users was not significant. Nonetheless, these views are against the views of Funmilayo (2013) and Bamidele, Omeluzor, and Amadi (2011) who stated that gender is a significant factor and that, males use electronic resources more than their female counterparts.

5.6.3 Age and Use of Scholarly Electronic Journals

Findings on the relationship between age and usage of scholarly electronic journals revealed that there was no statistically significant relationship between them in both GCUC and CSUC. This means that age did not necessarily influence the use of scholarly electronic journals. These findings also go to support the observations made by Borrego et al. (2012) who stated that there is no statistically significant relationship between age of scholars and use of e-journals. Likewise, Malemia (2014) reported that the percentage of respondents that were frequent users of e-journals was evenly distributed among all age groups. Waldman (2003) also argued strongly that age does not have any influence on the use of e-journals. In other words, when different age groups were exposed to similar experience, age did not seem to make any difference in people’s comfort levels with e-journal use. In support of the finding, Zhang, Ye & Liu (2011) found that use of e-journals does not vary with age. The findings are therefore in contrast with others from researchers including Erdamar and Demirel (2014); Kumar and Grover (2007); and Dilek-

Kayaoglu (2008) who found that age has an influence on use of e-journals and that the older one grows, the less often one uses e-journals.

5.6.4 Differences in Discipline and Use of Scholarly Electronic Journals

With the question of whether or not the “differences in discipline” of respondents from GCUC and CSUC influenced the “use” of e-journals, the findings showed that use of e-journals was not dependent on the disciplines to which the academics of both GCUC and CSUC belonged. That is, there was no statistically significant relationship between discipline and use of scholarly electronic journals. The findings concurred with that of Gerke and Maness (2010) who reported no relationship from different disciplines and use of e-resources. Malemia (2014) correspondingly found that, use of e-journals does not vary with discipline.

The finding however, did not support that of Wu and Chen (2012) who found that use of e-resources vary according to the differences in discipline of users. They found that users from the humanities perceive e-resources to be less important in comparison to users from other disciplines. Similarly, Atakan et al. (2008) and Kumar and Grover (2007) asserted that, disciplinary differences could influence usage of e-resources.

In spite of the fact that the findings did not agree with that of Wu and Chen 2012, the humanities were the least users of e-journals while the sciences and the social sciences were the highest users in that order. Barret (2005) also identified the humanities as low level users of e-journal. The findings go to challenge that of Bonthron et al., (2003) and Bar-Ilan et al., (2003) who argue that differences in the use of electronic resources among

the various disciplines do influence usage of e-journals. In another dimension, Toms and O'Brien (2008) and Sukovic (2008) postulated that there had been a change from previous studies that observed reticence among humanists to use electronic resources journals.

5.6.5 Educational Level and Use of Scholarly Electronic journals

On the issue of trying to find out whether educational level has any influence on use of e-journals, the study found that there was no statistically significant relationship between educational level and use of scholarly electronic journals in both university colleges. This indicates that use of e-journals was not dependent on the level of education of respondents which confirms the views of Malemia (2014). Bar-Ilan and Fink (2005) and Bar-Ilan et al., (2003) also argued that academic rank has no influence on the use of electronic resources.

5.6.6 Awareness and Use of Scholarly Electronic Journals

In finding out the relationship between awareness and use of scholarly electronic journals, the study found that there was a statistically significant relationship between the two variables at a p-value of 0.033 which is less than 0.05. This finding is in contrast with the findings of Baro et al. (2011) and Oyedapo and Ojo (2013) who argued that although awareness may lead to use of e-resources, it is not always the case. It may happen that users' awareness level could be higher than use of e-journals. They further reported that awareness level of their respondents about e-resources was more than use. Kwafoa et al. (2014) also found that even though 83 out of 217 respondents were aware of the

existence of e-resources, they did not use them. It however corroborates the findings of Bonthron et al. (2003) who indicated a statistically significant relationship between awareness and use of e-resources.

5.6.7 Computer Skills and Use of Scholarly Electronic Resources

The study found that there was no statistically significant relationship between computer skills and use of e-journals. This revelation means that there was no strong relationship between computer skills and use of e-journals which also implies that, computer skills to a large extent have no strong influence on usage of e-journals. Therefore, one should not be misled into thinking that, the level of computer searching skills or proficiency influence the use of e-journals in GCUC and CSUC. The findings however contrast with the views of Msagati (2014); Okello-Obura (2010); Rehman and Ramzy (2004), and Ansari (2010) who argued that there is a direct relationship between computer literacy and use of electronic resources.

5.7 Conclusion

Despite the numerous benefits of scholarly electronic journals, the study found that these expensive and useful resources were not effectively utilized in GCUC and CSUC because they were not adequately publicized thereby affecting awareness. Limitations such as power cuts, slow and unstable networks as well as information overload also affected accessibility and utilization of e-journals in the two institutions.

REFERENCES

- Abd, L., Abdul R., Zamlia, M., & Adnan J. (2011). Age, gender and race differences in the usage of digital library among Malaysian post graduate students. Retrieved on 12/04/15 from: www.academia.edu/.../Age_Gender_Race_Diferences_in_the_Usage.
- Abdul, M. K., & Ahmad, N. (2009). Use of e-journals by research scholars at Aligarh Muslim University and Banaras Hindu University. *The Electronic Library*, 27(4), 708-717.
- Abdulla, R. A. (2003). *The uses and gratifications of the internet among Arab students in Egypt*. A dissertation presented to the University of Miami, DAI-A 65/01. Retrieved from: <http://www.lib.uni.com/dissertations/fullcit/3119807> on 14/12/14.
- Ahmed, S.M.Z. (2013). Use of electronic resources by the faculty members in diverse public universities in Bangladesh. *The Electronic Library*, 31(3): 290-312.
- Amjad, A., Ahmed, S., & Naeem, S. B. (2013). Use of electronic information resources among research scholars in the Islamia University of Bahawalpur, Pakistan. *New Review of Academic Librarianship*, 19(3), 316-328.
- Anaraki, L. N., & Babalhavaeji, F. (2013). Investigating the awareness and ability of medical students in using electronic resources of the integrated digital library portal of Iran: A comparative study. *Electronic Library*, 31(1), 70 – 83.

- Ansari, M. N. (2010). Use of electronic resources among academics at the University of Karachi. *Library Philosophy and Practice*. (e-journal) Paper 385. Retrieved on 14/04/15 from: <http://digitalcommons.unl.edu/libphilprac/385>
- Asemi, A., & Riyahiniya, N. (2007). Awareness and use of digital resources in the libraries of Isfahan University of Medical Sciences, Iran. *The Electronic Library*, 25(3), 316- 327.
- Atakan, C., Atilgan, D., Bayran, O., & Arslantekin, G. (2008). An evaluation of the second survey on electronic databases usage at Ankara University digital library. *The Electronic Library*, 26(2), 249-259.
- Bar-Ilan, J., & Fink, N. (2005). Preference for electronic format of scientific journals -A case study of the Science Library users at the Hebrew University. *Library & Information Science Research*, 27, 363-376.
- Baro, E. E., Endouware, B. C., & Ubogu, J. O. (2011). Awareness and use of online information resources by medical students at Delta State University in Nigeria. *Library Hi Tech News*, 28(10), 11 – 17.
- Barrett, A. (2005). The information-seeking habits of graduate student researchers in the humanities. *Journal of Academic Librarianship*, 31 (4), 324-31.
- Bayugo, S. S., & Agbeko, K. S. (2007). Information seeking behaviour of health sciences faculty at the College of Health Sciences, University of Ghana. *Information Development*, 23(1), 63-70.
- Bonthron, K., Urquart, C., & Thomas, R. (2003). *Trends in use of electronic journals in higher education in the UK: Views of academic staff and students*. D-Lib

- Magazine (June), 9(6). Accessed on 12/12/14 from:
<http://www.dlib.org/dlib/June03/authors/06authors.html#BONTHRON>
- Borrego, A., Anglada, L., Barrios, M. & Garcia, F. (2012). Use and availability of scholarly journals in Catalan academic libraries. *Serials Review*, 38, 243-249.
- Chirra, R., & Madhusudhan, M. (2009). Use of electronic journals by doctoral research scholars of Goa University, India. *Library Hi Tech News*, 26(10), 12-15.
- Chu, S. K., & Law, N. (2006). Development of information search expertise: Research students' knowledge of databases. *Online Information Review*, 24(6), 621 - 642.
- Cothran, T., (2011). Google scholar acceptance and use among graduate students: A quantitative study. *Library & Information Science Research*, 33(4), 293-301.
- Dadzie, P. S. (2005). Electronic resources: Access and usage at Ashesi University College. *Campus-Wide Information Systems*, 22(5), 290 - 297.
- Dilek-Kayaoglu, H. (2008). Use of electronic journals by faculty at Istanbul University, Turkey: The results of a survey. *Journal of Academic Librarianship*, 34, 239-247.
- Dudley, J. M. (2011). Facilitating undergraduate use of subscription research databases. *TCC Proceedings*. Retrieved on 12/104/15 from:
etec.hawaii.edu/proceedings/2011/Dudley.pdf
- Dukic, D. (2013). Online databases as research support and the role of librarians in their promotion: the case of Croatia. *Library Collections, Acquisitions, & Technical Services*, 37(1-2), 56 -65.

- Egberongbe, S.H. (2011). The Use and Impact of Electronic Resources at the University of Lagos. *Library Philosophy and Practice (e-journal)*. Paper 472. Retrieved on 19/03/15 from: <http://digitalcommons.unl.edu/libphilprac/472>.
- Ercegovac, Z. (2009). What engineering sophomores know and would like to know about engineering information sources and access. *Issues in Science and Technology Librarianship*. Retrieved on 30/03/15 from: www.istl.org/09-spring/refereed3.html.
- Erdamar, G., & Demirel, H. (2014). Electronic source preferences of education faculty staff: A case study of Gazi University. *European Journal of Research on Education, Special Issue: Educational Technology and Lifelong Learning*, 6-15.
- Funmilayo, D. C. (2013). Gender differences in the use of academic resources: The case of FUTA library. *International Journal of Library and Information Science*, 5(8), 256-261.
- Garg, N. K. (2014). Use of InfoNet digital library consortium at Kurukshetra University, Kurukshetra and Maharishi Dayanand University, Rohtak: A study. *International Journal of Information Dissemination and Technology*, 4(1), 79-84.
- Gerke, J., & Maness, J. M. (2010). The physical and the virtual: The relationship between library as place and electronic collections. *College & Research Libraries*, 71 (1), 20-31.
- Gupta, D. K. (2011). Use pattern of print and electronic journals at the Kurukshetra University, India. *Electronic Library & Information Systems*, 45(2), 213-230.

- Harley, D. (2007). Use and users of digital resources: A survey explored scholars' attitudes about educational technology environments in the humanities. *EDUCAUSE Quarterly*, 30(4), 12-21.
- He, D., Wu, D., Yue, Z., Fu, A., & Vo, K. T. (2012). Undergraduate students' interaction with online information resources in their academic tasks: a comparative study. *Aslib Proceedings: New Information Perspectives*, 64(6), 615 - 640.
- Islam, S., Alam, S., & Sultana, S. (2011). Access and usage of electronic journals in Dhaka University Library (DUL): An empirical study. *Journal of the Bangladesh Association of Young Researchers (JBAYR)*, 1(2), 30-47.
- Kaur, B., & Verma, R. (2009). Use and impact of electronic journals in the Indian Institute of Technology, Delhi, India. *The Electronic Library*, 27(4), 611- 22.
- Khan, A. M., & Shukla, P. (2014). Scientists' attitude towards use of e-journals in Indian Institute of Toxicological Research (IITR), India. *IASLIC Bulletin*, 59(1), 30-40.
- Kinengyere, A. (2007). The effect of information literacy on the utilization of electronic information resources in selected academic and research institutions in Uganda. *The Electronic Library*, 25(3), 13-26.
- Kwafoa, P. N. Y., Imoro, O., & Afful-Arthur, P. (2014). Assessment of the use of electronic resources among administrators and faculty in the University of Cape Coast. *Library Philosophy and Practice (e-journal)*. Paper 1094. Accessed on 15/03/15 from: <http://digitalcommons.unl.edu/libphilprac/1094>
- Malemia, L. (2014). The use of electronic journal articles by academics at Mzuzu University, Malawi. *Library Philosophy and Practice (e-journal)*. Paper 1097.

<http://digitalcommons.unl.edu/libphilprac/1097>

- Manda, P. A (2005). Electronic resource usage in academic and research institutions in Tanzania. *Information Development*, 21, (4).
- Manda, P. A., & Mukangara, F. (2007). Gender analysis of electronic information resource use: The case of the University of Dar Es Salaam, Tanzania. *Library Journal, University of Dar Es Salaam*, 9(1), 31-52.
- Manda, P., & Nawe, J. (2009). The impact of electronic information resource use on research output: Experiences from Universities in Tanzania. *Heartland J. Libr. Info. Sci.*, 2(1&2), 92-106.
- Mbabu, L. G., Bertram, A., & Varnum, K. (2013). Patterns of undergraduates' use of scholarly databases in a large research university. *Journal of Academic Librarianship*, 39(2), 189-193.
- Mirza, M. S., & Mahmood, L. (2012). Electronic resources and services in Pakistani University libraries: A survey of users' satisfaction. *The International Information & Library Review*, 20(1), 1-9.
- Monopoli, M., Nicholas, D., Georgiou, P., & Korflati, M. (2002). A user-oriented libraries: Case study of the electronic journals' service of the Library Information service of University of Patras, Greece. *Aslib Proceeding*, 54(2), 103-107.
- Ndinoshiho, J. M. (2010). The use of electronic information services by undergraduate nursing students at the University of Namibia's Northern Campus: A descriptive study. *Information Development*, 26 (1), 57-65.
- Nisha, F., & Ali, N. P. M. (2013). Awareness and use of e-journals by IIT Delhi and Delhi University library users. *Collection Building*, 32(2), 57-64.

- Nyika, E. (2006). *Development of an African Marine Science Repository for electronic publication* *Odin Pub Africa: Experience of the Institute of Marine Sciences, University of Dar es Salaam, Tanzania*. Accessed on 19/10/14 from: http://www.apsr.edu.au/Open_Repositories_2006/edna_nyika.ppt.
- Okello-Obura, C., & Magara, E. (2008). *Electronic information access and utilization by Makerere students in Uganda. Evidenced Based Library and Information Practice*, 3(3). Accessed on 5/09/14 from: <http://ejournals.library.ualberta.ca/index.php/EBLIP/artilce/view/935/3328>
- Oyedapo, R. O., & Ojo, R. A. (2013). A survey of the use of electronic resources in Hezekiah Oluwasanm Library, Obafemi Awolowo University, Ile-Ife, Nigeria. *Library Philosophy and Practice, (e-journal)*. Paper 884. Retrieved on 14/04/15 from: <http://digitalcommons.unl.edu/libphilprac/884>
- Ozoemelem, O. A. (2009). Use of electronic resources by postgraduate students of the department of library and information science of Delta State University, Abraka, Nigeria. *Library Philosophy and Practice*. Retrieved on 14/05/15 from: <http://unlib.unl.edu/lpp/lpp2009.htm>
- Rehman, S. & Ramzy, V. (2004). Awareness and use of electronic information resources at the Health Science Centre of Kuwait University. *Library Review*, 53(3), 150-156.
- Sahu, G., Bijay K. P. B., & Mahapatra, R. K. (2013). Use of e-resources by the research scholars of Utkal University and Sambalpur University, Odisha: A comparative study. *VSRD International Journal of Technical & Non-Technical Research*, 4(1), 1-8.

- Sethi, B. B., & Panda, K. C. (2012). Use of e-resources by life scientists: A case study of Sambalpur University, India. *Library Philosophy and Practice, (e-journal)*. Paper 681. Retrieved on 26/04/15 from: <http://digitalcommons.unl.edu/libphilprac/681>
- Shija, H. (2009). *E-resources use via the internet improvement is a must: a case of special libraries in Tanzania*. Retrieved on 04/04/15 from www.ais.up.ac.za/digi/docs/papershija.doc.
- Shuling, W. (2007). Investigation and analysis of current use of electronic resources in university libraries. *Library Management*, 28(1/2), 72-88.
- Sinh, N. H., & Nhung, H. T. H. (2012). Users' searching behavior in using online databases at Vietnam National University, Ho Chi Minh City. *Library Management*, 33(8/9), 458 - 468.
- Sunil, T. M. K. (2014). Use of online resources at Jawaharlal Nehru University: A quantitative study. *Program: Electronic Library and Information Systems*, 48(3), 272-292.
- Swain, D. P. (2010). Students' keenness on use of e-resources. *The Electronic Library*, 28(4): 580-591.
- Tahir, M., Mahmood, K., & Shafique, F. (2010). Use of electronic information resources and facilities by humanities scholars. *The Electronic Library*, 28(1), 122-136.
- Talja, S., & Maula, H. (2003). Reasons for the use and non-use of electronic journals and databases: A domain-analytic study in four scholarly disciplines. *Journal of Documentation*, 59, 673-91.

- Vasishta, S. (2013). Dissemination of electronic journals: A content analysis of the library websites of technical university libraries in North India. *Electronic Library*, 31(3), 278-289.
- Waldman, M. (2003). *Freshman's use of library electronic resources and self-efficacy*. *Information Research*, 8(2). Accessed on 2/12/14 from: <http://informationr.net/ir/8-2/paper150.html>.
- Weiner, S.G. (2003). Resistance to change in libraries: Application of communication theories. *Portal: Libraries and Academy*, 3(1), 69-78.
- Whitakker, K. (1993). *The basics of library-based user services*. Michigan: Library Association.
- Wu, M. & Chen, S. (2012). How graduate students perceive, use and manage electronic resources. *Aslib Proceedings: New Information Perspectives*, 64(6), 641-652.
- Zhang, L. Ye, P. & Liu, Q. (2011). A survey of the use of electronic resources at seven universities in Wuhan, China. *Electronic Resources and Information System*, 45(1), 67-77.
- Zha, X., Li, J., & Yan, Y. (2012). Understanding usage transfer from print resources to electronic resources: A survey of users of Chinese University libraries. *Serials Review*, 38(1) 93-98.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents a summary of the study's findings based on the objectives and conclusion resulting from the findings. It also includes recommendations made based on the findings.

6.2 Summary of Findings

The study examined and compared accessibility and utilization of scholarly electronic journals by the academic staff of Garden City University College and Christian Service University College. The investigation was aimed at level of awareness of e-journals, extent of accessibility and utilization of e-journals, problems in e-journal access and use and factors influencing accessibility and utilization of e-journals with the purpose of ultimately making recommendations for effective and efficient access and use of e-journals.

6.2.1 Awareness of Scholarly Electronic Journals

The study sought to find out the level of awareness of e-journals among the academics in GCUC and CSUC. The findings revealed that awareness was not adequate in both university colleges even though it was a little higher in GCUC than CSUC. Respondents from the two institutions emphasised on inadequate publicity of e-journals in their respective institutions.

6.2.3 Accessibility of Scholarly Electronic Journals

The academics of GCUC and CSUC were not given adequate training on e-journals and accessibility was considerably based on trial and error for the academic staff of CSUC but based on guidance by library staff for those in GCUC. Most of the academic staff

from both institutions found it somehow easy to get the required information from e-journals. Scholarly electronic journals were found to be very useful because they improve teaching, learning and research by way of enhancing access to relevant information, enhancing quality of research, assisting in lecture notes preparation, enriching the curriculum and helping to make current information available.

6.2.2 Utilization of Scholarly Electronic Journals

As one of the objectives, the level of utilization of scholarly electronic journals in GCUC and CSUC was also ascertained. It was found that the level of utilization of e-journals was not worth the amount of money spent on their acquisition and maintenance. Among the purposes for which e-journals were used were research report writing, teaching, current awareness and research proposal writing. The findings revealed that e-journals were somehow under-utilized in both institutions and unawareness was identified as the major factor for the low usage.

6.2.4 Problems Influencing Accessibility and Utilization of Scholarly E-Journals

The study identified problems in a form of limitations which included unstable network, slow network and power cuts at GCUC whereas that of CSUC included slow network, power cuts and unstable network as the major hindrances to accessibility and utilization of scholarly electronic journals.

6.2.5 Factors influencing Accessibility and Utilization of Scholarly E-Journals

In an attempt to determine the factors influencing access and use of e-journals, the study identified awareness and information searching skills as major factors in addition to gender, age, differences in discipline, and educational level and the outcome is presented in the following paragraphs.

6.2.5.1 Gender and Usage of Scholarly Electronic Journals

Some arguments have emerged on gender as a factor influencing usage of e-journals. As a result, the study sought to determine the relationship between gender and usage of scholarly electronic journals in GCUC and CSUC and found that, gender had no influence on usage of e-journals.

6.2.5.2 Age and Usage of Scholarly Electronic Journals

One other controversial factor which was also examined in both university colleges was age. Findings on the relationship between age and usage of scholarly electronic journals revealed that there was no significant relationship between them in GCUC and CSUC.

6.2.5.3 Differences in Discipline and Usage of Scholarly Electronic Journals

In seeking to find out the relationship between differences in discipline and usage of e-journals, the study revealed that there was no significant relationship between disciplines and usage of scholarly electronic journals.

6.2.5.4 Educational Level and Usage of Scholarly Electronic Journals

On the issue of whether educational level influences usage of e-journals, the study found that there was no significant relationship between educational level and usage of scholarly electronic journals in both university colleges.

6.2.5.5 Awareness and Usage of Scholarly Electronic Journals

In finding out the relationship between awareness and usage of scholarly electronic journals, the study findings indicated that there was a significant relationship between the two variables in GCUC and CSUC.

6.2.5.6 Computer Skills and Usage of Scholarly Electronic Journals

When the study sought to find out the extent of relationship between computer searching skills and use of e-journals, no significant relationship was found between the two variables in GCUC and CSUC.

6.3 Conclusion

Scholarly electronic journals in GCUC and CSUC were relatively utilized and this is a common observation which has been a serious concern of professionals. Scholarly electronic journals are very expensive and for that matter, maximum accessibility and utilization should be ensured to justify the financial investments made in the acquisition and maintenance of these resources especially in an environment where libraries continue to face budgetary constraints. Inadequate level of awareness and limitations such as power cuts, slow and unstable networks as well as information overload and lack of searching skills which led to trial and error searching method also affected accessibility

and utilization of e-journals in the two institutions. These challenges tend to make print journals very difficult if not impossible to replace. Suggestions to solve these problems included organizing more awareness programmes for the academics of the two institutions, provision of adequate bandwidth to enable faster internet access and downloading and the use of power generation to solve power outages.

6.4 Recommendations

In solving the problem of ineffective utilization of scholarly electronic journals and improving e-journal services generally at Garden City University College and Christian Service University College, the following recommendations informed by the findings of the study were made in areas of awareness creation, training, provision of more relevant materials, infrastructure, quality of staff and sustenance.

6.4.1 Awareness Creation

In solving the problem of unawareness in GCUC and CSUC, it is recommended that both university colleges accept and employ good marketing strategies in order to attract most if not all of the academic staff of the two institutions to access and utilize scholarly electronic journals available for them from the libraries of their respective university colleges.

Both GCUC and CSUC should intensify publicity and promotion of their scholarly electronic journals to create more awareness. Librarians in the two institutions should adequately publicize e-journal services and operations on a continuous basis. This can be done in several ways including sending a list of e-journal databases with their web

addresses to all academic staff, circulating information on e-journals throughout the university college community as a whole, organizing exhibitions on e-journals for academic staff, using attractive posters and banners to advertise e-journals, developing a bulletin specifically on e-journals for the entire university colleges, periodically organizing sensitization and demonstration workshops and seminars on e-journals for academic staff, using modern web technologies like email, whatsapp, linkedIn, twitter and the like to reach them with information on e-journals among others.

Again, promotional materials or souvenirs including leaflets, pens and mouse-pads which are normally provided by the publishers and vendors of e-journals could be obtained by librarians from GCUC and CSUC and distributed among the academic staff as a way of drawing their attention thereby creating awareness of some of these electronic journal databases.

6.4.2 Training

To utilize the growing range of e-journals, the academics of GCUC and CSUC need to acquire and practice the skills necessary to exploit them. There is a need to organise orientation sessions and training programmes in accessing, searching and downloading of e-journals effectively at regular intervals for them which would also result in more awareness creation of these valuable resources.

Academic staff of GCUC and CSUC should be introduced to e-journal databases relevant to their areas of specialisation and a paper copy of the database hand-out distributed to

them. This would go a long way to help the academics of the two institutions to be more competent in accessing and utilizing e-journals optimally. Besides, online guide and search options to e-journals could be provided on the library web pages of the two institutions for all users including academic staff. This would also help the users to find the desired content as well as maximize the use of e-journals and satisfaction level of the academics.

All these could be better handled by conducting “training needs analysis” first. The needs analysis would identify real gaps or the exact skills the academics lack, for example, is it lack of IT skills or lack of search techniques like keyword, Boolean and directory search? Based on the results of the analysis, formal and differential training packages could be designed for the academic staff of both university colleges to improve on their competencies while reducing the trial and error method of searching for information from e-journal databases. The libraries of GCUC and CSUC could introduce feedback system (both online and offline) to observe the academics’ proper use of e-journals.

Moreover, handouts for each database could be developed with non-jargon, specific instructions for accessing e-journals and screen shots of what users should expect to see as they move through the instructions. These handouts should be emailed as well as distributing hard-copies directly to users including academic staff of GCUC and CSUC. Individual library consultation sessions could also be considered, in which academic staff meet one-on-one with the e-resources librarian of their respective university college and

will receive individualized training on how to choose and access e- journal databases and how to examine article abstracts to determine their relevance.

Training should be given to library staff as well. Having a library staff with the requisite expertise or competence is very critical to the development of e-journal services in a 21st century library. For this reason, library staff of GCUC and CSUC should be trained in e-journal database access and usage regularly and should actively review e-journal database contents in order to be prepared to answer all queries regarding the e-journal databases. This can be done through in-service trainings, seminars, workshops and the like which would enable the staff to be able to adequately organize and make available relevant e-journals to users for easy access. In other words, there should be training and re-training of library staff on how to maximize access and use of e-journals available in the library. In this way, the staff would be able to train the academic staff of GCUC and CSUC to effectively access and utilize e-journals efficiently and in turn. These forms of training which also serve as a kind of continuous professional education for the staff could be institutionalised as part of the development plan for e-journal services in order to render state-of-the-art services for users.

6.4.3 Provision of More Relevant Scholarly Electronic Journals

There is a clear direction from this study that the libraries of the two institutions should increase the number of e-journal subscriptions especially in the case of CSUC library which provides access to only open access journals for its clientele. The academic staff of

CSUC are not able to access full-text e-journal articles that require paid subscription but only abstracts and bibliographic information. They consider that provision of bibliographic information and abstracts of core and relevant articles is just a promise and does not satisfy their needs therefore it is not worth of their efforts of searching the e-journal databases. As a result, they are dispirited in using the e-journal databases. For this reason, more core paid subscription e-journals should be acquired for them or better still, the institution should join the Consortium of Academic and Research Libraries in Ghana (CARLIGH) which provides members with a number of relevant and core e-journals. The libraries of GCUC and CSUC should also conduct user survey to know the usage of e-journals and the future needs of the academic staff from time to time and include more and more number of relevant or core e-journal databases on various disciplines. The academics' requirements and opinions should be taken into consideration on priority basis while subscribing to the e-journals.

6.4.4 Infrastructure

There is the need for a conscious effort by the authorities of GCUC and CSUC to improve on the university colleges' ICT infrastructure in order to facilitate access to the online databases from wherever they may be located. More high-speed computer terminals should be installed in the various departments, computer laboratories, offices of academic staff and the university college libraries. Bigger bandwidth should be purchased so as to provide faster internet access that will save much of the users' time and be a source of motivation for the use of e-journals of GCUC and CSUC libraries.

Facilities like E-prozy Server which would allow academic staff of GCUC and CSUC to have off-campus access to domain or IP address restricted e-journals should be acquired to enable them to access these valuable electronic resources off-campus. The university college authorities should allocate sufficient funds to their respective libraries to acquire the latest information resources and upgrade their ICT equipments and facilities. All these would also solve the problem of slow and unstable network thereby enhancing accessibility and utilization of scholarly electronic journals in both institutions. Furthermore, technically trained staff should be appointed to manage the infrastructure and assists users in the use of e-journals in both university colleges. IT experts should be employed to handle or solve networking and hardware concerns. All academic staff should be provided with networked computers in their offices and if possible their homes in order to enhance access and usage of e-journals for teaching, learning and research purposes. Moreover, power generators should be purchased and used to solve the problem of power-cuts in order to ensure constant supply of electricity.

6.5 Areas for Further Research

The study examined only two colleges in Ghana. A number of other university colleges and universities that have equally adopted and utilized scholarly electronic journals could not be examined due to economic and time constraints. Further research into the accessibility and utilization of scholarly electronic journal services of these universities and university colleges to determine their peculiarities would be a very important research activity. It would also be interesting to replicate the study to include students.

BIBLIOGRAPHY

- Abd, L., Abdul R., Zamlia, M., & Adnan J. (2011). Age, gender and race differences in the usage of digital library among Malaysian post graduate students. Retrieved on 12/04/15 from: www.academia.edu/.../Age_Gender_Race_Diferences_in_the_Usage.
- Abdullah, R. A. (2003). *The uses and gratifications of the internet among Arab students in Egypt*. A dissertation presented to the University of Miami, DAI-A 65/01. Retrieved on 14/12/14 from: <http://www.lib.uni.com/dissertations/fullcit/3119807>.
- Abdullah, S. A. (2000). *Factors affecting international students use of the online catalogues and other information sources*. (A Doctoral dissertation submitted to the Florida State University). *Dissertations Abstract International*, 61, 1663.
- Abdul, M. K., & Ahmad, N. (2009). Use of e-journals by research scholars at Aligarh Muslim University and Banaras Hindu University. *The Electronic Library*, 27(4), 708-717.
- Adika, G. (2003). Internet use among faculty members of universities in Ghana. *Library Review*, 52 (1), 29-37.
- Agyekum, B. O., & Ossom, S. (2015). Awareness and impact of electronic journal usage by faculty members and lecturers in Kumasi Polytechnic, Ghana. *Information and Knowledge Management*, 5(1), 9-17.
- Ahmed, S. M. Z. (2013). Use of electronic resources by the faculty members in diverse public universities in Bangladesh. *The Electronic Library*, 31(3), 290 – 312.

- Ajegbomogun, F. O. (2007). Impediments to harnessing scholarly electronic journals on the internet in developing countries: A Nigerian university case study. *Library Hi Tech News*, 24(6), 27 – 32.
- Alemna, A. A., & Adanu, T. (2005). Internet use at the Balme Library. *Library Hi Tech News*, 22(2), 25-26.
- Al Ghaith, W. A., Sanzogni, L., & Sandhu, K. S. (2010). Factors influencing the adoption and usage of on line services in Saudi Arabia. *The Electronic Journal on Information Systems in Developing Countries*, 40(1), 1-32.
- Al-Gahtani, S. S. (2003). Computer technology adoption in Saudi Arabia: Correlates of perceived innovation attributing. *Information Technology for Development*, 10(1), 57-69.
- Amekuedee, J. O. (2002). *An evaluation of library automation in some Ghanaian university libraries*. (M.Phil. thesis) Department of Information Studies, University of Ghana, Legon.
- Amoaful, E. A. (2011). *The use of ICT in teaching and learning in the University of Ghana, Legon*. (M.Phil. thesis) Department of Information Studies, University of Ghana, Legon.
- Armstrong, C., Fenton, R., Lonsdale, R., Stoker, D., Thomas, R., & Urquart, C. (2001). A study of the use of electronic information systems by higher education students in the UK. *ASLIB*, 35(3), 241-262.
- Anaraki, L. N., & Babalhavaeji, F. (2013). Investigating the awareness and ability of medical students in using electronic resources of the integrated digital library portal of Iran: A comparative study, *Electronic Library*, 31(1), 70 – 83.

- Anchonna, A. U. (2008). *Extending the frontiers of library services through the Internet*. Samaru Journal of Information Studies, 8(2). Accessed on 20/10/14 from: <http://www.ajol.info/index.php/sjis/article/view/44827>
- Ani, O. E. (2010). Internet access and use: A study of undergraduate students in three Nigerian universities. *The Electronic Library*, 28 (4), 555-567.
- Ani, O. E. (2005). Evolution of virtual libraries in Nigeria: Myth or reality? *Journal of Information Science*, 31(1), 67-70.
- Ansari, M. N. (2010). Use of electronic resources among academics at the University of Karachi. *Library Philosophy and Practice*. (e-journal) Paper 385. Retrieved on 14/04/15 from: <http://digitalcommons.unl.edu/libphilprac/385>
- Asamoah-Hassan, H. (2003). Information: The oil in the wheel of national development. *Ghana Library Journal*, 15, 1-14.
- Asamoah-Hassan, H. (2010). *The Consortium of Academic and Research Libraries in Ghana (CARLIGH): The journey so far*. Accessed on 12/12/14 from: dspace.knust.edu.gh.
- Asamoah, R. (2014). *Use of ICT in teaching and learning in second cycle educational institutions: A comparative study of Labone Senior High School and Ghana International School*. (M. A dissertation) Department of Information Studies, University of Ghana, Legon.
- Asemi, A., & Riyahiniya, N. (2007). Awareness and use of digital resources in the libraries of Isfahan University of Medical Sciences of Iran. *The Electronic Library*, 35(3), 202-238.

- Atakan, C., Atilgan, D., Bayran, O., & Arslantekin, G. (2008). An evaluation of the second survey on electronic databases usage at Ankara University digital library. *The Electronic Library*, 26(2), 249-259.
- Babie, E. (2005). *The basics of social research*, (3rded.). Belmont: Thomson Wadsworth.
- Babbie, E. (2010). *The practice of social research*, (12thed.). Australia: Wadsworth/Cengage Learning.
- Bamidele, I. A., Omeluzor, S. U., & Amadi, H. U. (2013). Utilization of journal publications by undergraduate students of Babcock University, Nigeria. *Library Philosophy and Practice (e-journal)*. Paper 1006. Retrieved on 24/04/15 from: <http://digitalcommons.unl.edu/libphilprac/1006>
- Bandyopadhyay, A. (1999). Accessing SCI-tech literature: Commercial document delivery services and online full-text databases. *Collection Building*, 18(1).
- Bar-Ilan, J., & Fink, N. (2005). Preference for electronic format of scientific journals: A case study of the Science Library users at the Hebrew University. *Library & Information Science Research*, 27, 363-376.
- Baro, E. E., Endouware, B. C., & Ubogu, J. O. (2011). Awareness and use of online information resources by medical students at Delta State University in Nigeria. *Library Hi Tech News*, 28(10), 11 – 17.
- Barrett, A. (2005). The information-seeking habits of graduate student researchers in the humanities. *Journal of Academic Librarianship*, 31(4), 324-331.
- Bass, A., Fairlee, J., Fox, K., & Sullivan, J. (2005). *The information behaviour of scholars in the humanities and social sciences*. Seattle: University of Washington.

- Bayugo, S. S., & Agbeko, K. S. (2007). Information seeking behaviour of health sciences faculty at the College of Health Sciences, University of Ghana. *Information Development*, 23(1), 63-70.
- Bentil, W. (2011). *The Use of Electronic Resources in Ghanaian Universities: A comparative study of the University of Cape Coast and the Central University College*. (Unpublished M.Phil thesis). Department of Information Studies, University of Ghana, Legon.
- Bjork, C. B., & Turk, Z. (2000). *A survey of the impact of the internet on scientific publishing in construction of IT and construction management*. Accessed on 6/09/14 from: <http://www.itan.org/2000/5>.
- Bless, C. & Higson-Smith, C. (2004). *Fundamentals of social research methods*, (3rded.). Lusaka: Juta.
- Bonorino, A. G., & Molteni, V. E. (2007). Electronic journals collection in Argentine private academic libraries. *The Electronic Library*, 25(1), 65-79.
- Bonthron, K., Urquart, C., & Thomas, R. (2003). *Trends in use of electronic journals in higher education in the UK: Views of academic staff and students*. D-Lib Magazine (June), 9(6). Accessed on 12/12/14 from: <http://www.dlib.org/dlib/June03/authors/06authors.html#BONTHRON>
- Borrego, A., Anglada, L., Barrios, M., & Comellas, N. (2007). Use and users of electronic journals at Catalan universities: The results of a survey. *Journal of Academic Librarianship*, 33, 67-75.
- Borrego, A., Anglada, L., Barrios, M. & Garcia, F. (2012). Use and availability of scholarly journals in Catalan academic libraries. *Serials Review*, 38, 243-249.

- Borrego, A., & Ollé, C. (2006). A qualitative study of the impact of electronic journals on scholarly information behavior. *Library & Information Science Research*, 28(4), 24-40.
- Burns, A. C., & Bush, R. F. (2010). *Marketing research*, (6th ed.). Upper Saddle River, N. J.: Pearson/Prentice-Hall.
- Busha, C. H., Harter, S. P. (1980). *Research methods in librarianship: Techniques and interpretation*. New York: Academic Press.
- Chirra, R., & Madhusudhan, M. (2009). Use of electronic journals by doctoral research scholars of Goa University, India. *Library Hi Tech News*, 26(10), 12 – 15.
- Christian Service University College. (2013). *Annual Report 2013*. Retrieved 8/10/14 from: www.csuc.edu.gh.
- Chu, S. K., & Law, N. (2006). Development of information search expertise: Research students' knowledge of databases. *Online Information Review*, 24(6), 621 - 642.
- Cochenour, D., & Moothart, T. (2003). E-journal acceptance at Colorado State University: A case study. *Serials Review*, 29(1), 16-25.
- Cohen, L. B., & Calsada, M. M. (2003). Web accessible databases for electronic resource collections: A case study and its implications. *The Electronic Library*, 21(1), 31-8.
- Connell, T. H., Rogers, S. A., & Diedrichs, C. P. (2005). OhioLINK electronic journal use at Ohio State. *Libraries and the Academy*, 5, 371-390.
- Coonin, B. (2002). Establishing accessibility for e-journals: A suggested approach. *Journal of Library Hi Tech*, 20(2), 207-220.

- Cothran, T. (2011). Google scholar acceptance and use among graduate students: A quantitative study. *Library & Information Science Research*, 33(4), 293-301.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed method approaches*, (2nd ed.). Sage Publications: Thousand Oaks, California.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative and mixed method approach*. (3rd ed). Thousand Oaks, CA: SAGE.
- Dadzie, P. S. (2005). Electronic resources: Access and usage at Ashesi University College. *Journal of Campus-Wide Information Systems*, 22(5), 290-297.
- David, N., & Paul, H. (2006). Electronic journals: Are they really used? *Interlending & Document Supply*, 34(2), 74 – 77.
- de Groote, S. L., Shultz, M., & Doranski, M. (2005). Online journals' impact on the citation patterns of medical faculty. *Journal of the Medical Library Association*, 93, 223-228.
- de Groote, S. L. (2008). Citation patterns of online and print journals in the digital age. *Journal of the Medical Library Association*, 96, 362-369.
- Delvenne, C., & Pasleau, F. (2003). Organizing access to evidence-based medicine resources on the web. *Computer Methods and Programs in Biomedicine*, 71(1), 1-10.
- Denscombe, M. (2007). *The good research guide for small-scale social research projects*. Maidenhead, England: Open University Press.
- Dilek-Kayaoglu, H. (2008). Use of electronic journals by faculty at Istanbul University, Turkey: The results of a survey. *Journal of Academic Librarianship*, 34, 239-247.

- Dudley, J. M. (2011). Facilitating undergraduate use of subscription research databases. *TCC Proceedings*. Retrieved on 12/104/15 from: etec.hawaii.edu/proceedings/2011/Dudley.pdf
- Dukic, D. (2013). Online databases as research support and the role of librarians in their promotion: The case of Croatia. *Library Collections, Acquisitions, & Technical Services*, 37(1-2), 56 -65.
- Egberongbe, H. S. (2009). *The use of electronic resources in Nigerian universities*. (Unpublished M.Phil. thesis).Department of Information Studies, University of Ghana, Legon.
- Egberongbe, H. S. (2011). The Use and Impact of Electronic Resources at the University of Lagos. *Library Philosophy and Practice (e-journal)*.Paper 472.Retrieved on 19/03/15 from: <http://digitalcommons.unl.edu/libphilprac/472>.
- Ellison, J. (2001). *E-commerce: Household shopping on the internet*. The Daily. Accessed on 15/11/14 from: <http://www.statcan.gc.ca/daily-quotidien/011023/dp011023b-eng.html>.
- Ercegovac, Z. (2009). What engineering sophomores know and would like to know about engineering information sources and access. *Issues in Science and Technology Librarianship*. Retrieved on 30/03/15 from: www.istl.org/09-spring/refereed3.html.
- Erdamar, G., & Demirel, H. (2014). Electronic source preferences of education faculty staff: A case study of Gazi University. *European Journal of Research on Education, Special Issue: Educational Technology and Lifelong Learning*, 6-15.

- Finholt, T. A., & Brooks, J. (1999). Analysis of JSTOR: The impact on scholarly practice of access to on-line journal archive. In *Technology and scholarly communication*. Edited by Ekman, R. and Quandt, E. Berkeley: University of California Press.
- Ford, N., Miller, D., & Moss, N. (2001). The role of individual differences in internet searching: An empirical study. *Journal of the American Society for Information Science and Technology*, 52(12), 1049-1066.
- Fraenkel, J. R., & Wallen, N. E. (2000). *How to design and evaluate research in education*. (4thed.). Boston: McGraw- Hill.
- Funmilayo, D. C. (2013). Gender differences in the use of academic resources: The case of FUTA library. *International Journal of Library and Information Science*, 5(8), 256-261.
- Garden City University College (2014). *President's Report 2014*. Retrieved 8/10/14 from: www.gcuc.edu.gh.
- Garg, N. K. (2014). Use of InfoNet digital library consortium at Kurukshetra University, Kurukshetra and Maharishi Dayanand University, Rohtak: A study. *International Journal of Information Dissemination and Technology*, 4(1), 79-84.
- Gerke, J., & Maness, J. M. (2010). The physical and the virtual: The relationship between library as place and electronic collections. *College & Research Libraries*, 71 (1), 20-31.
- Ghauri, P., & Gronhaug, K. (2005). *Research methods in business studies: A practical guide*, (3rded.). New Jersey: Prentice Hall/Financial Times.

- Gorard, S. (2013) *Research design: Creating robust approaches for the social sciences*. Retrieved on 15/04/15 from: www.nova.edu/ssss/qr/qr18/clancy26.pdf.
- Gray, C. (2011). *E-journals: Their use, value and impact-final report*. Accessed on 11/11/14 from: www.rin.ac.uk/our-work/communicating-and-disseminating-research/e-journals-their-use-value-andimpact
- Gupta, D. K. (2011). Use pattern of print and electronic journals at the Kurukshetra University, India. *Electronic Library & Information Systems*, 45(2), 213-230.
- Hallmark J. (2004). *Access and retrieval of recent journal articles: A comparative study of chemists and geoscientists*. *Issues in Science and Technology Librarianship*. Accessed on 24/10/14 from: <http://www.istl.org/04-summer/article1>.
- Harley, D. (2007). Use and users of digital resources: A survey explored scholars' attitudes about educational technology environments in the humanities. *EDUCAUSE Quarterly*, 30(4),12-21.
- Hassan, A. (2010). *Accessibility and utilisation of scholarly electronic journals by members of the academic of Kwame Nkrumah University of Science and Technology*. (Unpublished M. A. Dissertation). Department of Information Studies, University of Ghana, Legon.
- Hayati, Z.,&Jowkar, T. (2008). Adoption of electronic reference materials in academic libraries of Iran. *The International Information & Library Review*, 40(1), 52-63.
- Healey, J. (1993). *Satistics: A tool for social research*, (3rded.). Belmont, CA: Wadsworth.

- He, D., Wu, D., Yue, Z., Fu, A., & Vo, K. T. (2012). Undergraduate students' interaction with online information resources in their academic tasks: A comparative study. *Aslib Proceedings: New Information Perspectives*, 64(6), 615 - 640.
- Hiom, D. A. (2004). Chapter 7 - Case Study, in Neil Jacobs and Lesly Huxley (Eds.), *Online Information Services in the Social Sciences*. Chandos Press.
- Hsu, C., & Sandford, B. (2010). *Instrumentation*. In Neil J. Salkind (Ed.), *Encyclopedia of research design*. Thousand Oaks, CA: SAGE Publications.
- Islam, S., Alam, S., & Sultana, S. (2011). Access and usage of electronic journals in Dhaka University Library (DUL): An empirical study. *Journal of the Bangladesh Association of Young Researchers (JBAYR)*, 1(2), 30-47.
- Janardhanam, K., Sinha, R., & Babu, V.S. (2011). Adoption of new technology in B-School: An analytical study of Bangalore. Paper presented at *International Conference of the Association for Technology and Business Management (CTBM-11)*, March 2011, Dubai: SZABIST. Retrieved on 15/10/14 from: <http://www.trikal.org/ictbm11/ProgrammeBulletin/Programme Bulletin.pdf>
- Jensen, M. (2007). The outlook for the telecentres and cybercafés in Africa. Accessed on 10/09/14 from: www.acacia.org.za/jensen_articles.htm#Jensen-outlook for telecentres.
- Kaur, B., & Verma, R. (2009). Use and impact of electronic journals in the Indian Institute of Technology, Delhi, India. *The Electronic Library*, 27(4), 611-22.
- Khan, A. M., & Shukla, P. (2014). Scientists' attitude towards use of e-journals in Indian Institute of Toxicological Research (IITR), India. *IASLIC Bulletin*, 59(1), 30-40.

- Khan, A. M., Zaidi, S. M., & Bharati, M. S. Z. (2009). Use of on-line databases by faculty members and research scholars of Jawaharlal Nehru University (JNU) and Jamia Millia Islamia (JMI), New Delhi (India): A survey. *The International Information and Library Review*, 41(1), 71–78.
- Khan, S. I. (2012). Use of e-journals by students and research scholars in the Department of Botany of Aligarh Muslim University. *Library Philosophy and Practice*. Retrieved on 12/12/15 from: <http://unllib.unl.edu/LPP/sharajul-islam.htm>
- Kindilchie, A. I., & Samarraie, I. F. (2008). Interaction and impact of electronic information resources on Qatar University faculty. *Libri*, 58(1), 281–293.
- King, D. W., & Montgomery C. H. (2002). After migration to an electronic journal collection: Impact on faculty and doctoral students. *D-Lib Magazine*, 8(12), 46–58.
- Kiondo, E. & Nawe, J. (2005). The impact of ICT library services in teaching, learning and research at UDSM. *Research paper*.
- Kinengyere, A. (2007). The effect of information literacy on the utilization of electronic information resources in selected academic and research institutions in Uganda. *The Electronic Library*, 25(3), 13–26.
- Klemperer, K. (1999). *Electronic journals: a selected resource guide*. Retrieved on 12/10/14, from: <http://www.harrassowitz.de/ms/ejresguide.html>.
- Kling, R. & Covi, L. M. (1995). Electronic journals and legitimate media in the system of scholarly communication. *The Information Society*, 11(4), 261–271.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Delhi: Wiley Eastern Limited.

- Kumar, M. A., & Reddy, V. P. (2014). Use of e-journals by research scholars in university libraries in Andhra Pradesh. *Library Philosophy and Practice (e-journal)*. Paper 1086. Retrieved on 13/03/15 from: <http://digitalcommons.unl.edu/libphilprac/1086>
- Kumar, S., & Grover, K. (2007). Electronic journals: Impact on scholarly communication, user and library. *Library Herald*, 45(4), 325-336.
- Kumekpor, T. K. B. (2002). *Research methods and techniques of social research*. Accra: SonLife Services.
- Kwadzo, G. (2015). Awareness and usage of electronic databases by Geography and Resource Development and Information Studies Graduate Students in the University of Ghana. *Library Philosophy and Practice (e-journal)*. Paper 1210. Retrieved on 23/03/15 from: <http://digitalcommons.unl.edu/libphilprac/1210>.
- Kwafoa, P. N. Y., Imoro, O., & Afful-Arthur, P. (2014). Assessment of the use of electronic resources among administrators and faculty in the University of Cape Coast. *Library Philosophy and Practice (e-journal)*. Paper 1094. Accessed on 15/03/15 from: <http://digitalcommons.unl.edu/libphilprac/1094>
- Lamothe, A.R. (2012). *Factors influencing usage of an electronic journal collection at a medium-size university: An eleven-year study*. Canadian Journal of Library and Information Practice and Research, 7(1). Accessed on 4/10/14 from: <http://journal.lib.uoguelph.ca/index.php/perj/>
- Lee, Y., Kozar, K. A., & Larsen, K. R. T. (2004). The Technology Acceptance Model: Past, present, and future. *Communication of the Association for Information Systems*. 12(50), 753-780.

- Li, Y. (2004). *Faculty perceptions about attributes and barriers impacting diffusion of Web-Based Distance Education (WBDE) at the China Agricultural University*. (Unpublished Ph.D. Dissertation). University of Texas A & M University, USA.
- Lorenzo, T. (2010). Leadership and adoption of instructional technology in a military medical learning environment: A Case Study. *Journal of American Society for Information Science*, 48(6), 508-518.
- Lucas, H. C., Ginzber, M. J., & Schultz, R. L. (1990). *Information systems implementation: Testing a structural model*. Norwood, NJ: Ablex Publishing.
- Lynch, J. M. (ed.) (2003). Research questions for the twenty-first century. *Library Trends*, 51(4), 617.
- Madhusudhan, M. (2010). Use of electronic resources by research scholars of Kurukshetra University. *The Electronic Library*, 28(4), 492-506.
- Madhusudhan, M. (2007). Internet use by research scholars in University of Delhi. *Library Hi Tech News*. 24(8), 36-42,
- Malemia, L. (2014). The use of electronic journal articles by academics at Mzuzu University, Malawi. *Library Philosophy and Practice (e-journal)*. Paper 1097. Retrieved on 02/03/15 from: <http://digitalcommons.unl.edu/libphilprac/1097>
- Manda, P. A (2005). Electronic resource usage in academic and research institutions in Tanzania. *Information Development*, 21, (4).
- Manda, P. A., & Mukangara, F. (2007). Gender analysis of electronic information resource use: The case of the University of Dar Es Salaam, Tanzania. *Library Journal, University of Dar Es Salaam*, 9(1).

- Manda, P., & Nawe, J. (2009). The impact of electronic information resource use on research output: Experiences from Universities in Tanzania. *Heartland J. Libr. Info. Sci.*, 2(1&2), 92-106.
- Martey, A. (2004). ICT in distance education in Ghana. *Library Hi Tech News*, 21(5), 16-18.
- Mbabu, L. G., Bertram, A., & Varnum, K. (2013). Patterns of undergraduates' use of scholarly databases in a large research university. *Journal of Academic Librarianship*, 39(2), 189-193.
- Meadow, C. T. (1988). Back to future: Making and interpreting the database industry timeline. *Database*, 11(5), 23-40.
- Mgobozi, M. N., & Ocholla, D. N. (2002). The use of electronic journals for the dissemination of scholarly information by the University of Natal and the University of Zululand. *South African Journal of Libraries & Information Science*, 68(2).
- Millar, L. (Ed) (2009). *Understanding the context of electronic records management: Module 1*. London: International Records Management Trust.
- Mirza, M. S., & Mahmood, L. (2012). Electronic resources and services in Pakistani University libraries: A survey of users' satisfaction. *The International Information & Library Review*, 20(1), 1-9.
- Monopoli, M., Nicholas, D., Georgiou, P., & Korflati, M. (2002). A user-oriented libraries: Case study of the electronic journals' service of the Library Information service of University of Patras, Greece. *Aslib Proceeding*, 54(2), 103-107.

- Montgomery, C. H. & King, D. W. (2002). Comparing library and user related costs of print and electronic journal collections: A first step towards a comprehensive analysis. *D-Lib Magazine*, 8(10). Accessed on 10/03/15 from: www.dlib.org/october02/montgomery/10montgomery.htm.
- Msagati, N. (2014). Awareness and use of scholarly electronic journals by members of academic staff: A case study of Dar es Salaam University College of Education (DUCE). Paper 1124. *Library Philosophy and Practice. (e-journal)*. Retrieved on 05/12/14 from: <http://digitalcommons.unl.edu/libphilprac/1124>
- Mukherjee, B. (2009). Scholarly communication: A journey from print to web. *Library Philosophy and Practice. (e-journal)*. Paper 285. Retrieved on 02/05/15 from: <http://digitalcommons.unl.edu/libphilprac/285>
- Mutula, S. M. (2007). Paradigm shift in information environment: Prospect and challenges African libraries. *Library Hi Tech*, 25, (3).
- Naidu, G. H. S., Rajput, P., & Motiyani, K. (2007). Use of Electronic Resources and services in University Libraries: A study of DAVV Central Library, Indore, In: NACLIN. 309-319.
- Nazari, F. (2014). Attributes of Diffusion Theory as effective predictors on university faculty members' adoption of online database in Iran. *Swiss Journal of Research in Business and Social Sciences*, 1(1), 38-48.
- Nazari, F., Khosravi, F., & Babalhavaeji, F. (2013). Applying Rogers' Diffusion of Innovation theory to the acceptance of online databases at University Zone of Iran. *Malaysian Journal of Library & Information Science*, 18(3), 25-38.

- Ndinoshiho, J. M. (2010). The use of electronic information services by undergraduate nursing students at the University of Namibia's Northern Campus: A descriptive study. *Information Development*, 26 (1), 57-65.
- Negahban, M. B., & Talawar, V. G. (2009). *Dependency on e-resources among Social Science Faculty in Iranian universities*. Chinese Librarianship: An International Electronic Journal, 28. Accessed on 5/11/14 from: <http://www.iclc.us/cliej/c128NT.html>
- Neuman, W. L. (2006). *Social research methods: Qualitative and quantitative approaches*, (6th ed.). Boston: Pearson.
- Neuman, W. L. (2007). *Basics of social research: Qualitative and quantitative approaches*, (2nd ed.). Boston: Pearson Education.
- Nicholas, D, & Huntington, P. (2006). Electronic journals: Are they really used? *Interlending & Document Supply*, 34(2), 74 – 77.
- Nicholas, D., Huntington, P., & Jamali, H. R. (2007). The use, users, and role of abstracts in the digital scholarly environment. *Journal of Academic Librarianship*, 33, 446-453.
- Nisha, F., & Ali, N. P. M. (2013). Awareness and use of e-journals by IIT Delhi and Delhi University library users. *Collection Building*, 32(2), 57-64.
- Nwagwu, E. W., Adekannbi, J., & Bello, O. (2009). Factors influencing use of the internet: A questionnaire survey of the students of University of Ibadan, Nigeria. *The Electronic Library*. 27(4), 718-734.
- Nyika, E. (2006). *Development of an African Marine Science Repository for electronic publication* *Odin Pub Africa: Experience of the Institute of Marine Sciences*,

- University of Dar es Salaam, Tanzania.* Accessed on 19/10/14 from:
http://www.apsr.edu.au/Open_Repositories_2006/edna_nyika.ppt.
- Nwezeh, C. M. T. (2010). The impact of internet use on teaching, learning, and research activities in Nigerian Universities: A case study of Obafemi Awolowo University. *The Electronic Library*, 28(5), 688–701.
- Office of the Auditor-General of Canada (OAC), (2007). *Conducting Surveys, pretesting data collection instrument.* Available at http://www.oag-bvg.gc.ca/internet/English/meth_gde_e_19734.html. Accessed on 15/10/2014.
- Okello-Obura, C. & Magara, E. (2008). *Electronic information access and utilization by Makerere students in Uganda. Evidenced Based Library and Information Practice*, 3(3). Accessed on 5/09/14 from:
<http://ejournals.library.ualberta.ca/index.php/EBLIP/artilce/view/935/3328>
- Okore A. M., Asogwa, C. N., & Eke, H. N. (2009). Online resources and web research. In Charles, O. Onekwu; Michael O. Okoye, and Chinwe N. Ezeani (eds.). *Introduction to the use of the library and study skills*. Nsukka.: The library Department, University of Nigeria, Nsukka.
- Okon, E. A., Ngulube, P., & Onyancha, B. (2014). Accessibility and utilization of electronic information resources for research by academic staff at selected Nigerian Universities between 2005 and 2012. *The International Information & Library Review*, 46(1-2), 51- 62.
- Oyedapo, R.O., & Ojo, R.A. (2013). A survey of the use of electronic resources in Hezekiah Oluwasanm Library, Obafemi Awolowo University, Ile-Ife, Nigeria.

Library Philosophy and Practice. Retrieved on 14/05/15 from:
<http://digitalcommons.unl.edu/libphilprac/120>

Ozoemelem, O. A. (2009). Use of electronic resources by postgraduate students of the department of library and information science of Delta State University, Abraka, Nigeria. *Library Philosophy and Practice*. Retrieved on 14/05/15 from:
<http://unlib.unl.edu/lpp/lpp2009.htm>

Palmer, C. L., & Neumann, L. J. (2002). The information work of interdisciplinary humanities scholars: Exploration and translation. *Library Quarterly*, 72(1), 85-117.

Paton, M. Q. (2002). *Qualitative evaluation and research methods*, (3rded.). Thousand Oaks, CA: Sage Publication.

Prytherch, R. (ed.) (2000). *Harrod's librarians' glossary and reference book*, (9thed.). Aldershot: Gower.

Qasim, J., & Khan, A. M. (2015). Awareness and use of e-journals by the scientists of CSIR- Institute of Genomics and Integrative Biology (IGIB), Delhi, and Indian Institute of Chemical Biology (IICB), Kolkata, India: A comparative study. *Library Philosophy and Practice (e-journal)*. Paper 1202. Retrieved on 02/05/15 from: <http://digitalcommons.unl.edu/libphilprac/1202>

Rao, S. S. (1998). Trends in publishing and delivery of electronic information. *New Library World*, 99(1145). Retrieved on 15/10/14 from:
www.emeraldinsight.com.

Reed, B., & Tanner, D. R. (2001). Information needs and library services for the Fine Arts Faculty. *Journal of Academic Librarianship*, 27(3), 229-233.

- Rehman, S. & Ramzy, V. (2004). Awareness and use of electronic information resources at the Health Science Centre of Kuwait University. *Library Review*, 53(3), 150-156.
- Rosenberg, D. (2006). Towards the digital library in Africa. *The Electronic Library*, 23(3).
- Rogers, E. M. (1995). *Diffusion of innovations*, (4thed.). New York: The Free Press.
- Rogers, E. M. (2003). *Diffusion of innovations*, (5thed.). New York: The Free Press.
- Rogers, S. A. (2001). Electronic journal usage at Ohio State University. *College & Research Libraries*, 62(1), 25-34.
- Rowlands, I. (2007). Electronic journals and user behaviour: A review of recent research. *Library & Information Science Research*, 29, 369-396.
- Rusch-Feja, D., & Siebeky, U. (1999). Evaluation of usage and acceptance of electronic journals: Results of an electronic survey of Max Planck Society Researchers including usage statistics from Elsevier, Springer, and Academic Press (full report). *D-Lib Magazine* (October), 5(10). Accessed on 6/09/14 from:
<http://www.dlib.org/dlib/october99/rusch-feja/10rusch-feja-full-report.html>
- Sahu, G., Bijay K. P. B., & Mahapatra, R. K. (2013). Use of e-resources by the research scholars of Utkal University and Sambalpur University, Odisha: A comparative study. *VSRD International Journal of Technical & Non-Technical Research*, 4(1), 1-8.
- Sasse, M., & Winkler, B. J. (1993). Electronic journals: A formidable challenge for libraries. *Advances in Librarianship*, 17, 149-173.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*, (5thed.). Harlow: Prentice Hall/Financial Times.

- Sethi, B. B. & Panda, K. C. (2012). Use of e-resources by life scientists: A case study of Sambalpur University, India. *Library Philosophy and Practice, (e-journal)*. Paper 681. Retrieved on 26/04/15 from: <http://digitalcommons.unl.edu/libphilprac/681>
- Sheeja, N. K. (2010). Sciences versus social sciences: A study of information-seeking behaviour and user perceptions of academic researchers. *Library Review*, 59(7), 522-531.
- Shija, H. (2009). *E-resources use via the internet improvement is a must: A case of special libraries in Tanzania*. Retrieved on 04/04/15 from www.ais.up.ac.za/digi/docs/papershija.doc on 9th October, 2013.
- Shuling, W. (2007). Investigation and analysis of current use of electronic resources in university libraries. *Library Management*, 28(1/2), 72-88.
- Singh, S. P., & Kumar, K. (2005). *Special libraries in electronic environment*. New Delhi: Boswell.
- Sinh, N. H., & Nhung, H. T. H. (2012). Users' searching behavior in using online databases at Vietnam National University, Ho Chi Minh City. *Library Management*, 33(8/9), 458-468.
- Soanes, C., & Stevenson, A. (Eds) (2006). *Oxford Dictionary of English*, (2nd ed. rev.) Oxford: Oxford University Press.
- Sunil, T. M. K. (2014). Use of online resources at Jawaharlal Nehru University: A quantitative study. *Program: Electronic Library and Information Systems*, 48(3), 272-292.
- Sukovic, S. (2008). Convergent flows: Humanities scholars and their interactions with electronic texts. *Library Quarterly*, 78(3), 263-284.

- Swain, D. P. (2010). Students' keenness on use of e-resources. *The Electronic Library*, 28(4): 580-591.
- Swanson, E. B. (1988). *Information system implementation: Bridging the gap between design and utilization*. Homewood, IL: Irwin.
- Tahir, M., Mahmood, K. & Shafique, F. (2010). Use of electronic information resources and facilities by humanities scholars. *The Electronic Library*, 28(1), 122-136.
- Tajafari, M. (2014). Accessibility and use of electronic journals at Iranian university libraries. *Library Philosophy and Practice (e-journal)*. Paper 1135. Retrieved on 12/03/15 from: <http://digitalcommons.unl.edu/libphilprac/1135>
- Talja, S., & Maula, H. (2003). Reasons for the use and non-use of electronic journals and databases: A domain-analytic study in four scholarly disciplines. *Journal of Documentation*, 59, 673-91.
- Tenopir, C. (2003). Use and users of electronic library resources: An overview and analysis of recent research studies. Washington, DC: Council on Library and Information Resources. Accessed on 8/11/14 from: <http://www.clir.org/pubs/reports/pub120/pub120.pdf>.
- Thanuskodi, S. (2011). User awareness and use of online journals among faculty members in Combatore District: A survey. *J Communication*, 2(1), 23-32.
- Tenopir, C. (2003). *Use and users of electronic library resources: An overview and analysis of recent research studies*. Washington, DC: Council on Library and Information Resources. Accessed on 23/10/14 from: <http://www.clir.org/pubs/reports/pub120/pub120.pdf>.

- Tenopir, C., & King, D. W. (2002). Reading behaviour and electronic journals. *Learning Publishing, 15*(4), 259-265.
- Tomney, H., & Burton, P. F. (1998). Electronic journals: A study of usage and attitudes among academics. *Journal of Information Science, 24*(6), 419-429.
- Toms, E. G., & O'Brien, H. L. (2008). Understanding the information and communication needs of the e-humanist. *Journal of Documentation, 64*, 102-130.
- Trochim, W. T. (2001). Sampling. Retrieved on 12/01/15 from <http://www.apdip.net/publications/iespprimers/eprimer-edu.pdf>.
- Trivedi, M., & Joshi, A. (2009). Usage of electronic journals (e-journals) versus print journals by healthcare professionals in HM Patel Centre for Medical Care and Education (HMPCME). *Journal of Health Informatics in Developing Countries, 3*(1), 13-16.
- Ugwu, C. I. & Onyegiri, D.C. (2013). Management problems of electronic information resources: A case study of UNN Library. *International Journal of Library and Information Science, 5*(5), 126-133.
- Usluel, Y. K., Aşkar, P., & Bas, T. (2008). A structural equation model for ICT usage in higher education. *Educational Technology & Society, 11*(2), 262-273.
- Vakkari, P. (2008). Perceived influence of the use of electronic information resources on scholarly work and publication productivity. *Journal of the American Society for Information Science and Technology, 59*(4), 602–612.

- Vasishta, S. (2013). Dissemination of electronic journals: A content analysis of the library websites of technical university libraries in North India. *The Electronic Library*, 31(3), 278-289.
- Waldman, M. (2003). *Freshman's use of library electronic resources and self-efficacy*. Information Research, 8(2). Accessed on 2/12/14 from: <http://informationr.net/ir/8-2/paper150.html>.
- Walker, J. (2006). New resource discovery mechanisms. In Stone, G. (ed.), *The e-resources management handbook*. UKSG: London.
- Wisniewski, J., & Fichter, D. (2007). Electronic resources won't sell themselves: Marketing tips. *ONLINE*, 31, (Jan-Feb).
- Weiner, S. G. (2003). Resistance to change in libraries: Application of communication theories. *Portal: Libraries and Academy*, 3(1), 69-78.
- Whitakker, K. (1993). *The basics of library-based user services*. Michigan: Library Association.
- Williamson, K., Wright, S., Burstein, F., & Schauder, D. (2003). Adoption of online databases in public libraries: An Australian case study. *LIBRES: Library and Information Science Research International Journal*, 13(2), 1-8.
- Wu, M. & Chen, S. (2012). How graduate students perceive, use and manage electronic resources. *Aslib Proceedings: New Information Perspectives*, 64(6), 641-652.
- Yu, C. S., & Tao, Y. H. (2009). Understanding business-level innovation technology adoption. *Technovation*, 29(2), 92-109.
- Zhang, L. Ye, P. & Liu, Q. (2011). A survey of the use of electronic resources at seven

universities in Wuhan, China. *Electronic Resources and Information System*, 45 (1), 67-77.

Zhang, Y. (2001). Scholarly use of internet based e-resources. *Journal of the American Society for Information Science and Technology*, 52(8), 628-654.

APPENDIX I**QUESTIONNAIRE****UNIVERSITY OF GHANA****DEPARTMENT OF INFORMATION STUDIES**

Dear Sir/Madam,

I am MPhil student of the Department of Information Studies, University of Ghana and I am conducting a study on “*Accessibility and Utilization of Scholarly Electronic Journals by the Academic Staff of Garden City University college, Kumasi and Christian Service University College, Kumasi*” with the aim of recommending ways to ensure maximum access and use of these resources. Kindly complete this questionnaire to assist me in conducting this study. Information gathered by this questionnaire will be treated with utmost confidentiality and will be used for academic purposes only. Thank you.

B. Ernest.

0267224444

SECTION A: BIOGRAPHIC DATA

Q1. University College.....

Q2. Gender: Male [] Female []

Q3. Age: 20-29 years [] 30-39 years [] 40-49 years [] 50-59 [] 60 years and above []

Q4. Which Department do you belong to?

Please state.....

Q5. Status (*please tick where appropriate*)

Teaching Assistant [] b) Tutor [] Lecturer [] Associate Professor [] Professor []
Other (Specify).....

Q6. What is your highest level of education? First degree [] Masters [] PhD []
Other (Specify).....

SECTION B: ACCESS TO INTERNET

Q7. Do you access the internet? Yes [] No []

(If your answer to question 7 is 'Yes', go to Q8 and if your answer to question 7 is 'No', go to Q9.)

Q8. Where do you access the internet? *(You may tick more than one answer)* Library
Computer Lab. [] Office [] Home [] Internet café [] Other (Specify).....

Q9. What is the level of your computer skills?

None [] Beginner [] Intermediate [] Advanced []

SECTION C: AWARENESS OF SCHOLARLY ELECTRONIC JOURNALS

Q10. Are you aware of the existence of scholarly electronic journals at the University
College's library? Yes [] No []

(If your answer to question 10 is 'Yes', go to Q11 and if your answer to question 10 is 'No', go to Section D)

Q11. How did you get to know of the existence of scholarly electronic journals at the
library?

Library website [] Brochure [] Notice Board [] Library guide [] Friends []
Orientation [] Colleague [] Other (specify)

SECTION D: UTILIZATION OF SCHOLARLY ELECTRONIC JOURNAL

Q12. What format of journal do you prefer to use to access information?

Print ☐ Electronic ☐ Both ☐

Give reasons for your choice of answer in Q12.....

.....

.....

Q13. Do you use scholarly electronic journals provided by the university college library?

Yes ☐ No ☐

Q14. Where do you access scholarly electronic journals? (*You may tick more than one answer*) Library Computer Lab. ☐ Office ☐ Home ☐ Internet café ☐

Other(Specify).....

Q15. For what purpose(s) do you use scholarly electronic journal? (*You may tick more than one answer*)

Research proposal writing ☐ Current awareness ☐ Research report writing ☐

Research proposal funding ☐ Teaching purposes ☐ Writing conference paper ☐

Consultancy services ☐ Other(specify).....

SECTION E: ACCESSIBILITY OF SCHOLARLY ELECTRONIC RESOURCES

Q16. How have you learnt to access these electronic journals?

Trial and error ☐ Orientation ☐ Guidance from library staff ☐

Guidance from colleagues ☐ Other (specify).....

Q17. What search technique do you use to access scholarly electronic journals? (*You may tick than one answer*)

I don't know any search technique ☐ Keyword searching ☐ Boolean operators ☐
Directory search ☐ Phrase searching ☐ Truncation ☐ Other
(specify).....

Q18. Have you ever attended any training on how to access electronic journals?

Yes ☐ No ☐

Q19. If your answer to Q18 is 'Yes', to what extent were you satisfied with the training you attended?

Very satisfied ☐ Satisfied ☐ Somewhat satisfied ☐ Dissatisfied ☐ Very
dissatisfied ☐

Q20. How often does the university college provide training on scholarly electronic journals?

Very often ☐ Often ☐ Once in a while ☐ Not at all ☐ Not sure ☐

SECTION F: EASE OF USE

Q21. Do you think it takes a lot of effort to become skillful in using electronic journals?

A lot of effort ☐ A little effort ☐ No effort ☐

Q22. How do you conduct your searches?

Self ☐ Assistance from library staff ☐ Others (specify).....

Q23. How would you rate your level of proficiency in the use of electronic resources?

Highly proficient ☐ Proficient ☐ Moderately proficient ☐ Quite proficient ☐

Not proficient ☐ Not at all ☐

SECTION G: USEFULNESS OF ELECTRONIC RESOURCES

Q24. How useful are electronic journals to you?

Very useful ☐ Useful ☐ Somewhat useful ☐ Not useful ☐

Q25. How have these scholarly electronic journals improved teaching and learning? (*Tick as many as are applicable*)

Accessibility of information [] Enrichment of curriculum []

Time saving in information access [] Current information []

Enhanced quality of research [] Other(specify).....

Assists in lecture notes preparation []

Q26. Do you think academic endeavours would be difficult to undertake without scholarly electronic journals?

Very difficult [] Somehow difficult [] Difficult [] Not all that difficult [] Not at all difficult []

Q27. Do you think scholarly electronic journals can completely replace the print journal?

Yes [] Not sure [] No []

SECTION H: PROBLEMS INFLUENCING ACCESSIBILITY AND UTILIZATION OF ELECTRONIC JOURNALS

Q28. What are some of the limitations you encounter in using scholarly electronic journals? (*Tick as many as are applicable*)

Information overload [] Provides unorganized information []

Lack of searching skills [] Non-availability of required information []

Lack of time for searching [] Difficult to read from screen []

Inadequate networked computers [] Access time cost []

Limited opening time for access to computers [] Slow network []

Not easy to use [] Unstable network []

Power cuts [] Other(specify).....

Q29. What major factor(s) do you think affect your access to and usage of electronic journals?

.....

SECTION I: SUGGESTIONS TO ENSURE MAXIMUM AND EFFICIENT ACCESS AND USE OF SCHOLARLY ELECTRONIC JOURNALS

Q30. Do you think that scholarly electronic journals have been publicized adequately in your University College or library to attract members of the University College community?

Adequately publicized [] Somehow adequately publicized [] Inadequately publicized []

Q31. If ‘Somehow or Inadequately publicized in Q40’, what do you think must be done?

.....

Q32. How can maximum access and use of these scholarly electronic journals be ensured?

More awareness programmes [] Solving network problems []

Training should be intensive [] Provision of more network computers []

Reduction of access time cost [] Extended opening time for access to computers []

Provision of relevant resources[] Use of power-generators to solve power cuts []

Reduction of access time cost [] Other (specify).....

Q33. Any additional comments or suggestions?

.....

.....

.....

.....

Thank you for your time and co-operation