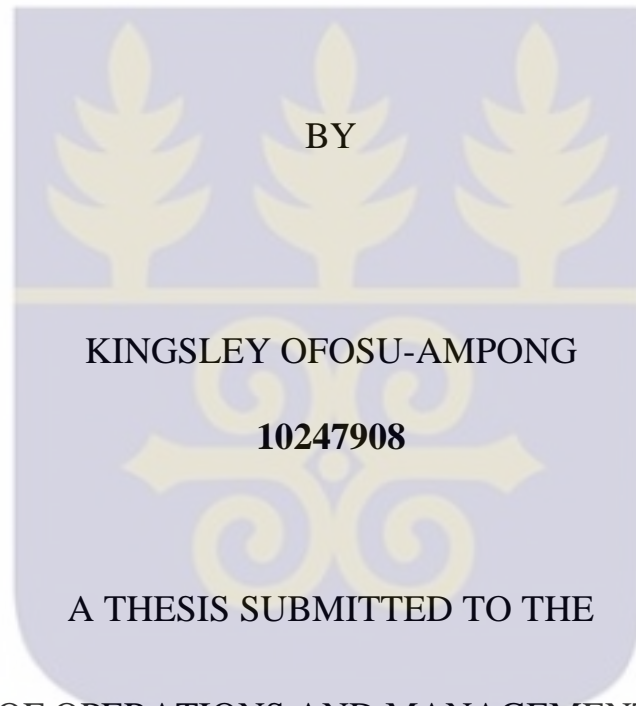


UNIVERSITY OF GHANA

THE UPTAKE OF INSTITUTIONAL REPOSITORY:

THE CASE OF UNIVERSITY OF GHANA.



DEPARTMENT OF OPERATIONS AND MANAGEMENT INFORMATION  
SYSTEMS, UNIVERSITY OF GHANA BUSINESS SCHOOL, UNIVERSITY  
OF GHANA, LEGON IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE AWARD OF AN MBA (MIS-OPTION) DEGREE

2016

### **Declaration**

I do hereby declare that this work is the result of my own original investigation and that it has not been published and/or submitted wholly or partly for any other degree in this University or elsewhere. All references used in the work have been fully acknowledged. I bear full responsibility for any shortcoming in this work.

Signature.....



.....Date 15<sup>th</sup> June, 2016...

**KINGSLEY OFOSU-AMPONG**

10247908



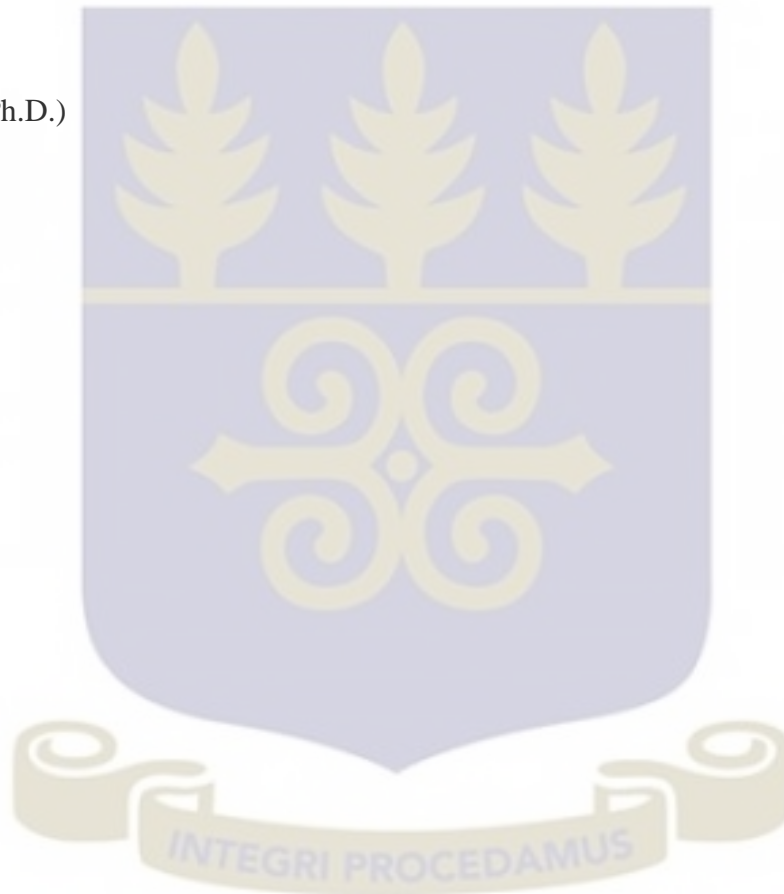
**Certification/Approval**

I hereby certify that this work was supervised in accordance with procedures laid down by this University.

Signature.....Date.....

Dr. John Effah (Ph.D.)

(Supervisor )



### **Dedication**

I dedicate this work to my family for their support during this long journey especially, my departed mother Mrs. Leticia Ampong (May her beautiful soul RIP)

May Almighty God bless and grant you all long life.



## ACKNOWLEDGEMENTS

I thank God for his guidance and protection throughout this research work. In particular, a lot of thanks go to Mr. Asiedu Among for taking time to proof read the scripts for me to finish my thesis on time.

I also thank Dr. John Effah, my Supervisor, who despite his heavy schedule of work was able to read through my scripts and advice accordingly. His inspiration and patience gingered me on till the end of the work.



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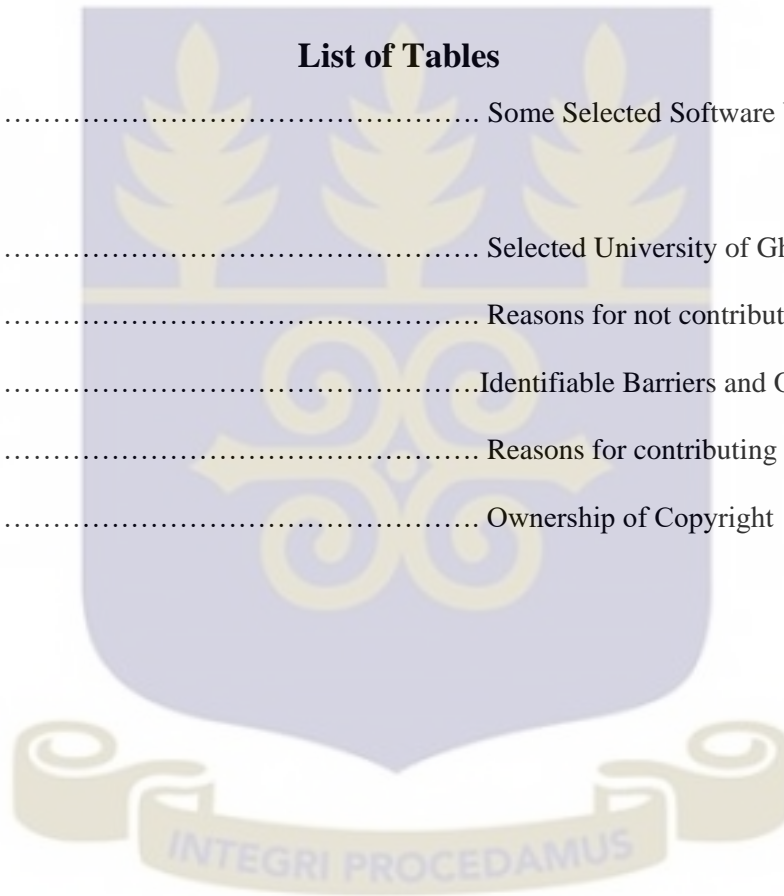


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## ABSTRACT

The study purposed to investigate the experience, contribution and opinions of users of institutional repository (IR) developed at University of Ghana (UG) and also find the challenges facing the institutional repositories (called UGSpace) at the University of Ghana.

This study is conducted using a qualitative research approach and the case study research technique. The data collection tool was an unstructured interview guide.

The study found out that most of the respondents were unaware of the IR. Others that were aware hardly contribute their research materials to the IR. Respondents learnt of the IR service provided by UG through workshop on the theme “Providing practical guidance for effective digital collection programme” organized by University of Ghana; whilst others through web-links provided on institutions’ websites. Those that contributed felt it was a "simple and quick approach to impart and disseminate research results". Most of the respondents were eager to reserve symposium/meeting/class papers. The most imperative purpose behind contribution to the IR was observed to be conservation of records for future use and preservation. Peer review was especially adequate and accepted as a mechanism for quality control. More than half of the respondents wanted to give open access with no obstruction for others use in the open repository. The limitation of the study was that only users of University of Ghana institutional repositories were studied.

## LIST OF ABBREVIATION

DD	DOCUMENT DIGITIZATION
ETD	ELECTRONIC THESES AND DISSERTATIONS
IR	INSTITUTIONAL REPOSITORY
NDLTD	NETWORKED LIBRARY OF THESES AND DISSERTATIONS
UG	UNIVERSITY OF GHANA
UGBL	UNIVERSITY OF GHANA BALME LIBRARY
UGLS	UNIVERSITY OF GHANA LIBRARY SYSTEMS
UP	UNIVERSITY OF PRETORIA



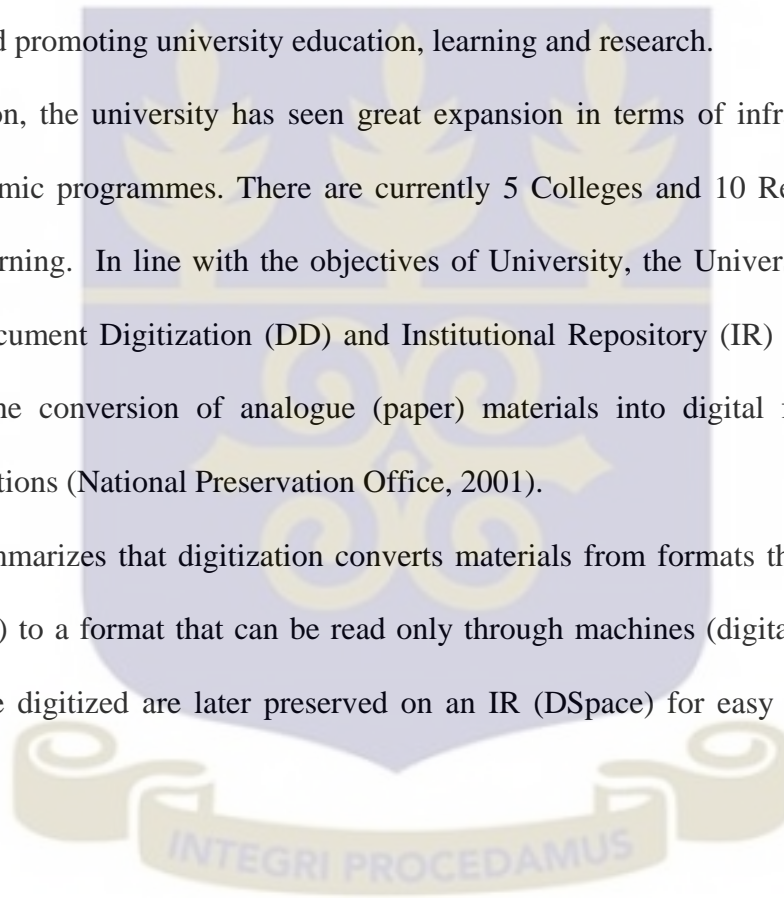
## CHAPTER 1: INTRODUCTION

### 1.1 Research Background

The University of Ghana was founded in 1948 as the University College of the Gold Coast on the recommendation of the Asquith Commission, on Higher education in the then British colonies. The University was founded by Ordinance on August 11, 1948 for the purpose of providing for, and promoting university education, learning and research.

From its inception, the university has seen great expansion in terms of infrastructure, student intake and academic programmes. There are currently 5 Colleges and 10 Regional Centres of Research and learning. In line with the objectives of University, the University of Ghana, has established a Document Digitization (DD) and Institutional Repository (IR) Centre. Document Digitization is the conversion of analogue (paper) materials into digital format for use in computer applications (National Preservation Office, 2001).

Jones (2001) summarizes that digitization converts materials from formats that can be read by people (analogue) to a format that can be read only through machines (digital). Documents or materials that are digitized are later preserved on an IR (DSpace) for easy access by faculty.



Lynch (2003) viewed IR as, “a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution (328)”.

The Document Digitization technology has been very useful to the University, having been established for about sixty six (66) year ago, one could imagine the huge volume of documents and records that are needed to be managed for easy reference when needed. The University was overwhelmed with the management of manual documents over the years, such as student records, senior member’s records, principal officer’s records, policies and procedures, student’s theses and dissertations, handouts, minutes of various meetings, videos, microfilms, etc (Barfi & Kwadzo,2014). In Ghana there have been few studies conducted on academic institution in the development of institutional repositories but none of the studies were on users and their perspective of IR. Therefore, in the present study, the author attempted to investigate knowledge, practice and opinions about IR among the users of institutions with IRs. This includes faculty members, students and researchers who may or may not be using the IR facility.

## **1.2 Research Problem**

The problem of many organizations such as the Ministries, Health Institutions, Financial and Educational Institutions, Professional Institutions, Libraries and Media Houses (both digital and print),is converting materials from formats that can be read by people (analogue) to a format that can be read only through machines (digital)(Jones,2001). Although, there is significant evidence that digitization and institutional repository has a positive association with industry

empowerment and development, most nations still do not appreciate the essence of efficient digitization system. An efficient DD systems and an IR provide institutions and individuals long-term preservation of the digitized document, free office space, and also creates easy access to an institution's collections. Having realized this, most academic libraries especially those in developed nations are adopting innovations in ICT to develop better preservation management systems to address the various challenges in libraries and other records sector. Ghana like many developing nations has also adopted institutional repository for the benefits it promises to deliver. The digitization and institutional repository project at the UGBL in Ghana received a lot of hype during the implementation. In view of the current state of the system, it is important to understand user's impact and experience.

There are number of studies conducted by librarians and information science professionals to determine the barriers to faculty deposit of research materials, and various ways to overcome these barriers (Sawant, 2012). According to Davis and Connolly (2007), "understanding the reasons for non-participation from an institution's faculty and students can assist developers and implementers of repositories in making enhancements to the software, developing an educational outreach program to encourage future use(Sawant, 2012), or incorporating faculty submissions as part of the publication process".

In Ghana there have been few studies conducted on challenges and prospects in engaging in digitization and IR but none of the studies were on users and their perspective of IR. Therefore, in the present study, the author attempted to investigate knowledge and opinions about IR among the users of University of Ghana with IRs. This includes faculty members, students, researchers, who may or may not be using the IR facility.

### **1.3 Research Purpose and Questions**

The purpose for this research is to understand the experience, contribution and opinions of users of institutional repository developed in University of Ghana. To accomplish this purpose, the research objectives stated above have to be fulfilled. This research therefore sets out to realize these research objectives by answering the following theoretically informed questions:

- What are the experiences and opinions of users and non-users of institutional repository developed in Universities?
- What are the reasons for contributing or not contributing documents to the institutional repository?

### **1.4 Chapter Composition**

Chapter 1 introduces the background and intent of the study. The chapter then goes on to present the research problem, research objectives, research purpose, research question, justification and scope of the study. Finally, the chapter presents the research chapter organization.

Chapter 2 reviews the literature of journal articles, books and publications on the main themes that serve as the bases for this research on IR.

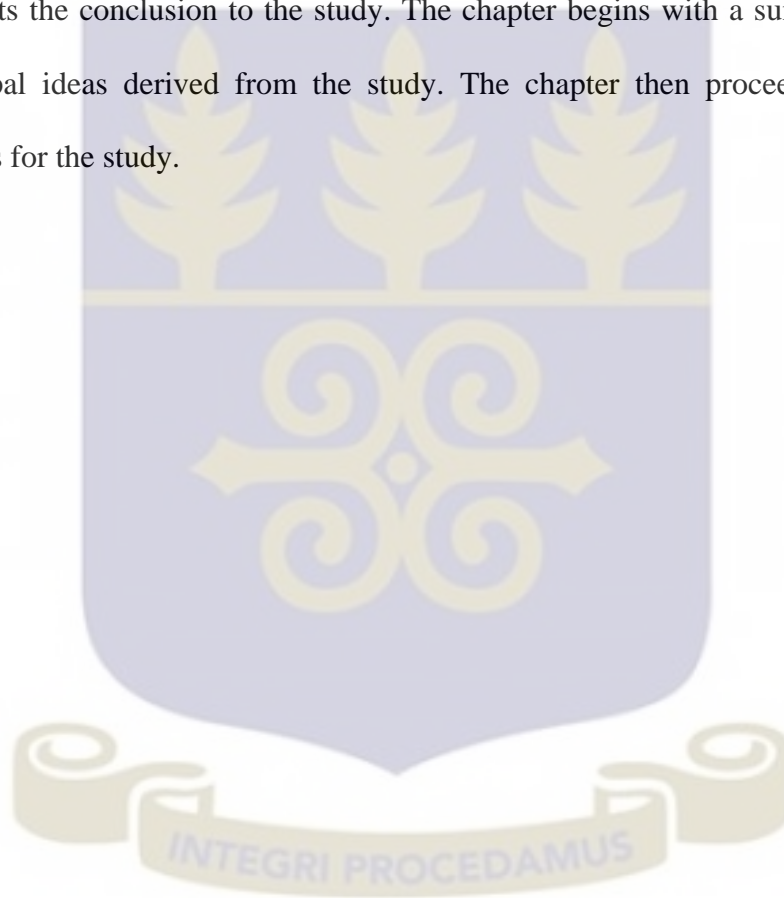
Chapter 3 presents the methodology employed in this research. The chapter first takes a look at the underlying assumptions for the choice of research methodology, data collection methods, analysis techniques and then presents some ethical considerations.

Chapter 4 presents empirical data collected from the field and analyzes the data in the context of the research framework adopted and the various underlying assumptions in the research

methodology. As a case study, relevant qualitative and interpretive tools were employed to collect and analyze data. This chapter also presents the interpretation of the research findings.

Chapter 5 presents the discussions of the research findings. This chapter was used to examine and explain the findings of this research from the literature reviewed in the light of the research questions.

Chapter 6 presents the conclusion to the study. The chapter begins with a summary of primary aims and principal ideas derived from the study. The chapter then proceeds to discuss the recommendations for the study.



## CHAPTER 2: LITERATURE REVIEW

### 2.0 Introduction

Chapter 1 introduced the study by stating the background of the study, research objectives, research purpose, research questions and the justification/scope for the study. Chapter 2 examines relevant literature related to the study in order to identify gaps in previous research. This chapter reviews literature from previous research on Purposes of digitization of library resources, what to consider in digitizing content, a description of electronic thesis and dissertations repository (the Case of University Of Pretoria-Up), need for digital preservation, software used by different institutions, UGSpace, Institutional Repository (IR) and its challenges in establishing in Ghana.

### 2.1 Digitization

National Preservation Office (2001) defines digitization as the conversion of analogue materials into a digital format for use in computer applications. This is the first stage to adopt before institutionalizing the repository. Jones (2001) summarizes that digitization converts materials from formats that can be read by people (analogue) to a format that can be read only through machines (digital). Digitization technology is providing opportunities for records institutions to create and publish multimedia documents, and later share their heritage/resource information with worldwide audiences. Skills in understanding the principles and best practices in the digitization of primary textual and image resources have broad value; thus insightful and perceptive understanding on how to achieve effective and efficient management of the digitized information is principal.

### **2.3 Purposes of Digitization of Library Resources**

There are three major reasons for digitization endeavours: (i) there is a need to preserve endangered library resources, (ii) improvement of the efficiency of information search mechanisms, and (iii) digitization improves access to library resources (Paris & Fabunmi, 2009). Most libraries are digitizing materials which might be lost in the future, such as old manuscripts, research projects, photo images, analogue maps, non-live musical recordings, government official gazettes and several other historical records. The effort to digitize the intellectual property of the institution is what is known as digitization (Eke, 2011). Digitization is useful in preserving precious materials. Making high-quality digital images available electronically will reduce wear and tear of fragile items. However, digital copy should not be seen as a replacement for the original piece, therefore original document should be cared for even after digitization.

Preservation remains a secondary benefit of digital projects (Paris & Fabunmi, 2009). Paris and Fabunmi (2009) argues that digitization improves access to library resources.

By digitizing library collections, information will be accessible to all instead of a group of researchers. Digital projects allow users to search for collections rapidly and comprehensively from anywhere at any time. Digitization makes the invisible to be visible. Several users can access the same material the same time without hindrance, thus there are several reasons for setting up repositories (Cullen and Chawner, 2008). It also removes the problem of distance, as users do not have to travel to libraries that possess the hard copies of library materials before they can access and use such materials. In Japan, for example, the Ministry of Education, Culture, Sports, Science and Technology has encouraged Japanese university libraries to develop institutional repositories to promote sharing of knowledge throughout Japan and internationally

(Cullen and Nagata, 2008). A digital library can be made to serve a region with less than optimal access to resources (Musoke, 2008, Paris & Fabunmi, 2009).

## **2.4 What is an Institutional Repository?**

According to Barton (2004) an institutional repository is a database with a set of services to capture, store, index, preserve and redistributes a university's scholarly research in digital formats.

The SPARC organization defines institutional repositories as follows:

- Institutionally defined
- Scholarly
- Cumulative and perpetual
- Open and interoperable

When we say institutional repositories are open and interoperable – it means they are OAI-compliant and allow open access to scholarly research (Barton, 2004).

### **2.4.1 Defining Institutional Repository**

Clifford Lynch (2003) in his article Institutional Repositories (Essential Infrastructure for Scholarship in the Digital Age) defines IRs in the following way: “A university-based institutional repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution.” At any given point in time, an institutional

repository will be supported by a set of information technologies, but a key part of the services that comprise an institutional repository is the management of technological changes, and the migration of digital content from one set of technologies to the next as part of the organizational commitment to providing repository services. An institutional repository is not simply a fixed set of software and hardware.

While early implementers of institutional repositories have chosen different paths to begin populating their repositories and to build campus community acceptance, support, and participation, Lynch (2003) believes that a mature and fully realized institutional repository will contain the intellectual works of faculty and students—both research and teaching materials—and also documentation of the activities of the institution itself in the form of records of events and performance and of the ongoing intellectual life of the institution. It will also house experimental and observational data captured by members of the institution that support their scholarly activities (Chan, 2004).

Lynch concludes that an institutional repository is the means by which our universities will address this responsibility both to the members of their communities and to the public. It is a new channel for structuring the university's contribution to the broader world, and as such invites policy and cultural reassessment of this relationship (Lynch, 2003).

## **2.5 The Need for Digital Preservation**

According to Hockx-Yu (2015) in order to understand the process necessary to achieve the long term digital preservation of objects placed within a repository, it is useful to break down what is understood as effective preservation. Wheatley (2004) summarized its key functional goals as follows:

- data is maintained in the repository without being damaged, lost or maliciously
- altered;
- data can be found, extracted and served to a user;
- data can be interpreted and understood by the user;
- the above can be achieved in the long term.

Hockx-Yu (2015), explains further Wheatley (2004) functional goals by stating that the first goal is a fundamental requirement that must be addressed by any digital repository. The second goal means that repositories need to support searching and retrieval to improve access to information. This is an area which has received much attention in the last few years and has been greatly facilitated by standards, such as the Open Archive Initiative Protocol for Metadata Harvesting (OAI-PMH), allowing service providers to create discovery services across repositories by recurrent metadata harvesting. The third and fourth goals are what digital preservation needs to achieve (Wheatley,2004). It is not enough just to keep the original bit-stream that represents the information stored in a digital object. The challenge is to make sure that users can access the content (Markey et al., 2009) that has been ingested into the repository in the past and make sense of its intellectual property, despite hardware and software changes over time.

Digital preservation is a complex process and there are many unsolved organizational, managerial and technical issues that make digital preservation a challenging task for those managing institutional repositories (Wheatley,2004; Lynch,2003). The focus of many repository activities to date has been on creating repositories, depositing content, promoting discovery and access and/or encouraging the necessary cultural change. Digital preservation has not been

embedded as an integral part of the repositories' workflow and there is neither much experience nor commonly agreed best practice as to how digital preservation is best performed (Hockx-Yu ,2015).

## **2.6 The Importance of Institutional Repositories**

According to Hockx-Yu (2015) institutional repositories are a new but important area within the educational landscape. Through free and unrestricted online availability, they make it easier for researchers to disseminate and share research outputs and thus support the open access goal of scholarly communication. As noted by SPARC (Scholarly Publishing and Academic Resources Coalition), institutional repositories are becoming a major component of the evolving structure of scholarly communication (Crow, 2002). In addition to authors, who gain visibility, and users, who find information more easily, the potential benefits of institutional repositories extend to institutions, which increase their research profile, and funders, who see wider dissemination of research outputs. Akintunde and Anjo (2012) stated that digitization holds great promise for preservation of materials, sharability of resources, and visibility of Nigerian libraries and institutions. RCUK (2005) are with the firm view that the research councils have proposed to make it mandatory for papers which result from Council funded research to be deposited in openly available repositories at the earliest opportunity.

This has been recognized by funding bodies worldwide and there is an international trend for funding bodies to require publication of research results through repositories(Hockx-Yu ,2015).

Institutional repositories can facilitate greatly enhanced access to traditional scholarly content by empowering faculty to effectively use the new dissemination capabilities offered by the network.

This is also occurring on a disciplinary basis through the development of e-print and preprint servers, at least in some disciplines (Lynch, 2003). In cases where the disciplinary practice is

ready, institutional repositories can feed disciplinary repositories directly. In cases where the disciplinary culture is more conservative, where scholarly societies or key journals choose to hold back change, institutional repositories can help individual faculty take the lead in initiating shifts in disciplinary practice (Lynch, 2003).

Lynch (2003) argued that institutional repositories can encourage the exploration and adoption of new forms of scholarly communication that exploit the digital medium in fundamental ways. This, to me, is perhaps the most important and exciting payoff: facilitating change not so much in the existing system of scholarly publishing but by opening up entire new forms of scholarly communication that will need to be legitimized and nurtured with guarantees of both short- and long-term accessibility. Institutional repositories can support new practices of scholarship that emphasize data as an integral part of the record (Westell,2006) and discourse of scholarship. They can structure and make effective otherwise diffuse efforts to capture and disseminate learning and teaching materials (Shearer,2008), symposia and performances, and related documentation of the intellectual life of universities (Lynch,2003).

## 2.7 Selected Software Which Are Used By Institutions

Table 2.1 Some Selected Software Which Are Used By Institutions

NAME OF SOFTWARE	DESCRIPTION
	<p>Software developed by Laval University Library, Canada was designed for electronic preprints and post prints of institution faculty and staff.</p> <p>Archimede was designed to support multilingual institutional implementations, and it organizes the content submission process</p>

Archimede	<p>in the intranet environment managed locally by research community. The Archimede institutional repository system manages the university or institution electronic theses and dissertations.</p> <p>This was developed on a variety of Java open sources technologies, runs on many operating systems, and can be installed on an existing technical infrastructure of any institution (<a href="http://archimede.bibl.ulaval.ca">http://archimede.bibl.ulaval.ca</a>).</p>
CERN Document server software (CDSware).	<p>This software was developed and maintained by The European Corporation for Nuclear Research (CERN) to support electronic preprint servers, online library catalogs and web-based document repository systems. CDSware was developed to handle large repositories of different format of documents (<a href="http://cdsware.cern.ch">http://cdsware.cern.ch</a>).</p>
DSpace	<p>Massachusetts Institute of Technology (MIT) and Hewlett-Packard (HP) have created DSpace software as a digital repository to manage the intellectual output of multidisciplinary research and development organizations. DSpace supports digital preservation, planning, and managing an institutional repository in a large institution. DSpace allows for workflow and customization. It supports community/collection-based content and submissions by different user communities (<a href="http://www.dspace.org">http://www.dspace.org</a>). The University of Ghana subscribes to the DSpace for their repository.</p>
E-prints	<p>The largest and most widely-distributed, installed software, developed by the University of Southampton, with minimum technical expertise. The software can be installed by any institution. By its integrated advanced search, extended metadata</p>

	and other features, the software can be customized to local requirements ( <a href="http://www.eprints.org">www.eprints.org</a> ).
Greenstone	This software is for building and distributing digital library collection. New Zealand Digital Library Project at the University of Waikato has developed and distributed it in cooperation with UNESCO and the Human Info NGO. It is an open source software that can handle multilingual documents, with search and browse facility under the GNU General Public License ( <a href="http://www.greenstone.org">www.greenstone.org</a> ).

(Ashalatha,2007)

According to Ashalatha, (2007) each of the above software systems is designed to meet the original requirements of developing an institutional repository. Archimede was designed to support multilingual institutional implementations. Cesar can handle large repositories with different types of documents. DSpace supports community-based content policies and submission process, and accommodates various kinds of digital document formats (Ashalatha,2007).

Eprints is a useful repository system with a large user community. But when there is a need for technical support and training in using the software, DSpace was found suitable. Though some libraries in the city are using Greenstone and E-Print, the majority is using DSpace as it has tremendous potential and can support numerous forms and formats. It was also noted that by using DSpace, there is a possibility of interacting with other libraries in the city for technical support. Moreover, it is open source software and can be customized as per the institutional Requirement (Ashalatha,2007)

## **2.10 A Description of Electronic Thesis and Dissertations Repository (ETD) (The Case of University Of Pretoria-UP)**

Macha and De Jager (2011) give much description of ETD in the article “A comparative overview of the development of the institutional repositories at the University of Cape Town and at the University of Pretoria”. According to Macha and Jager (2011) UP started making theses available online in the year 2000 as a pilot project (UPeTD website). Shortly afterwards the library was tasked with establishing an Institutional Repository for which the open access ETD-db software was used. At the end of 2002 the repository contained 39 theses and 26 dissertations and in 2003 a policy was adopted by Senate to make submission compulsory and a new server was bought. In 2004 UPeTD expanded in order to create a repository which was meant especially for research collections based on the success of UPeTD, which had provided PhD students according to Gray (2009) with research visibility and had contributed to their career success as their work was being read and downloaded.

The management of the UP Institutional Repository soon discovered that the Institutional Repository needed full time clerical staff. In 2006, UP established yet another Institutional Repository for the management and dissemination of digital research materials donated to or created by the community publications and for their special collections known as UPSpace. UP also has OpenUP which is a sub-collection of the larger UPSpace collection (Pienaar and Van Deventer, 2008). According to Olivier (2010), this “repository collection offers open access to full text of research articles published by staff, students and affiliates of the University of Pretoria.” OpenUP houses e-prints, of peer reviewed and published research articles (UP Website). In total UP has two repositories, UPeTD and UPSpace while OpenUP is part of UPSpace (Olivier, 2010). Olivier (2010) further states that OpenUP offers authors two routes of

publishing their research output which are; Open Access self-archiving which is known as the green route whereby authors submit their post-prints to the repository, and Open Access publishing which is known as the gold route whereby authors publish in open access journals.

UP became a member of the international body the Networked Library of Theses and Dissertations (NDLTD), which provides access to all the world's theses and dissertations and which hold annual conferences. It also rewards eTDs that use technology in innovative ways. UP has contributed to nine workshops in South Africa, Botswana, Lesotho, Ghana and Ethiopia, sharing expertise and enthusiasm and helping colleagues to start their own operations. They assisted the Council of Scientific and Industrial Research [CSIR] to develop a digital repository (Pienaar and Van Deventer, 2007). UPeTD was also the subject of seven conference presentations at ETD, open scholarship and library quality conferences. This indicates that to a considerable extent it is the leading university in SA in this field (UPeTD website-celebration of 10-yrs) (Macha and Jager, 2011).

### **2.10.1 Success of an Institutional Repository**

Below is a discussion of some of the criteria that have been identified with which to determine success of an institutional repository (Macha and Jager, 2011).

The content of an institutional repository is the most important factor that has been cited by researchers to show the success of a repository (Organ and Deveson, 2010; Thomas, 2007; Markey et al., 2009). Contents must be secured in order to be considered successful by the organizations or funders and other stakeholders. Markey et al. (2009) are of the view that not many researchers yet agree on what criteria to use to judge a successful repository but what seems to be clear is that content recruitment is an important factor to show whether the institutional repository is successful. Content recruitment is key because it literally is the core of

the institutional repository. A critical mass of material is necessary to generate both additional content and end-user activity. Value-added services in the institutional repository are also seen as an important part of success. These include everything from full text retrieval to preservation (Markey et al, 2009).

The contents of an institutional repository should include both born-digital and the older repurposed digital materials, and Westell (2006) argues that there should be more “born digital” materials in an Institutional Repository than repurposed materials. According to Westell (2006: 216), “the larger the critical mass of documents in an Institutional Repository, the more it will facilitate output measures.” This means that if a repository has a lot of content then it will stand a higher chance of being visible to the outside community and the more it will be used, hence its citation rate will go up. Long term availability is a further criterion found in the DINI(Deutsche Initiative for Networked Information) certificate and it can be discussed or embedded under the content factor; how the repository intends preserving these contents for future use. A DINI minimum requirement is that a document should at least be archived in a repository for no less than five years. According to Olivier (2010) UPeTD has a total of 5693 materials. University of Cape Town (UCT) currently has 4786 as updated on 30 June 2011 even though it has not yet been officially launched (Digitool website).

Use is the second factor that has been identified as a success factor and can be divided into three sub-categories: number of users; type of content used and nature of use (Harnad and McGovern, 2009). The most widely used method to measure the use of a repository is by webometrics. According to Organ (2006) and Thomas (2007) “webometrics is the statistical technique of counting the gross number of items in the live repository and to measure retrieval for counting hits and downloads with the option to sort by country.” Webometrics show how many hits have

been made from the repository and how many articles have been downloaded. The more the downloads, the clearer it becomes that the institutional repository is being used. To the researchers whose papers are downloaded, it may mean that they are likely to receive more citations. Westell (2006) notes that statistics of this sort contribute to institutional research outcomes and are powerful data to be used for individual career progress.

As research outputs are increasingly exposed to the web via search engines such as Google, organizations will be looking at and making use of institutional repository statistical packages. According to Organ (2006), high citation rates of researchers' work in various institutions make vice-chancellors and CEOs accept these new kinds of research infrastructure, with the promise of improving and enhancing the reputation of their institution and research staff. In addition, bringing together input data, usage and citation analysis is helpful in giving the picture of how effective a repository is. These data give evidence that the institutional repository is being used by a variety of users and provide benchmarks of use and growth over time for institutional repository funders and university administrators (Westell, 2006).

According to DINI, the factor of use, which is measured by webometrics, is similar to its criterion access statistics, which looks at access statistics of documents and their publication rate for the qualitative, quantitative and technological evaluation of the repository (DINI, 2011). Therefore, every repository must log statistical data and this can be achieved by a tracking system of downloads and citations. This is similar to Bibliometrics and in websites it is called webometrics.

At UP Electronic Theses and Dissertations, 4317706 files were downloaded in 2009 and regular messages were received from users testifying to the usefulness of the system (UPeTD website).

A survey done by Hammes (2007) also indicated that the ETD is appreciated by its alumni PhD

students who were experiencing rewards in their careers because the ETD had made their theses visible. At UCT, an interview with the LawSpace repository manager stated that the Faculty of Law receives emails from people outside the country who use and appreciate the LawSpace repository, and ask why recent student theses have not been uploaded yet. According to the Head of the Digitization Unit, the UCT Institutional Repository intends to track its use through the daily downloads and hits.

## 2.11 USERS OF IR

Over the past five years, the implementation of IRs has been growing rapidly and publications on IRs have flourished accordingly. Some notable earlier studies include Pelizzari's (2004) "Academic authors and open archives: a survey in the social science field", which reported on the following issues:

- authors' general attitudes towards electronic publications;
- use or non-use of IR;
- attitudes towards copyright; and
- reasons for contribution or non-contribution of documents to IR.

Westrienen and Lynch (2005) surveyed institutional repository deployment in 13 nations – Australia, Canada, the USA, Belgium, France, the UK, Denmark, Norway, Sweden, Finland, Germany, Italy and The Netherlands. They explored how national policies and strategies were shaping this deployment. Swan and Brown (2005) surveyed 1,296 academics worldwide to determine the current state of play with respect to authors' self-archiving behavior. The survey also briefly explored author experiences and opinions on publishing in open access journals.

Wojciechowska (2007) conducted a survey of mathematical and computer science community (128 lecturers and researchers) belonging to 12 research centers in France. The paper provided information about the knowledge of open archives, information search, experience in self-archiving and copyright awareness of French researchers in mathematics and computer science. Watson (2007) investigated authors' publishing behaviors, attitudes, concerns, and their awareness and use of their institutional repository (IR), Cranfield QUEprints. The findings suggested that despite a reasonable amount of advocacy, many authors had not heard of QUEprints and were not aware of its purpose.

A number of studies have explored what inspires scholars to publish research and to go on and self-archive in IR (Houghton et al., 2003; Swan et al., 2005). Shearer (2003) conducted a survey of the CARL institutional repositories to determine IRs' contribution to input activity and their use. She suggested that the success of IRs will be determined eventually by "their uptake and use by researchers". She argued that the success of an IR should be determined by its use, and one of the measures of usefulness is contribution of content. Although potential contributors include faculty, students and staff in universities, faculty members were considered the crucial contributors of scholarly content. However, several studies noted that it was difficult to get faculty members to contribute (Chan, 2004; Foster and Gibbons, 2005).

Foster and Gibbons (2005) interviewed 25 professors at the University of Rochester in order to investigate the factors affecting their contribution. In this study they identified reasons why faculty did not submit their content. The most important reasons were copyright infringement worries and disciplinary work practices (e.g. co-authoring or versioning).

Influence refers to providing assistance to other institutions in establishing their own institutional repositories. This is similar to what Thibodeau (2006) calls collaboration, and it is about how the

institutional repository associates with others in the country, region and in the world. Repositories are encouraged to work in collaboration with others to demonstrate that they are successful. If an institutional repository works in isolation, it might signify failure because it does not share and transfer knowledge (Thomas,2007). A more collaborative arrangement would exist where separate institutions decide to work together to leverage each other's strengths and where they form or join consortia for such purposes (Thibodeau, 2006).

This is already happening at UP which, is actively involved in helping other institutions set up their institutional repositories. According to Macha & Jager (2011) it assisted CSIR and expressed interest in working with and helping the Southern African Regional Universities Association (SARUA) representatives who visited them in 2007. Though the UCT institutional repository has not yet been launched, it is already very active in supporting other institutions who wish to learn about the theory and practice of digitization. The Head of the Digitization Unit has delivered workshops to librarians and archivists; for example the Kimberley Digitization Workshop and the Digitization Workshop for Library of Parliament librarians. Here in UCT she is teaching digitization to Post Graduate Diploma and Honours students in Library and Information Studies. The UCT institutional repository staff have also advised various departments on campus, on metadata standards and the implementation of good metadata practice (Macha & Jager, 2011).

## **2.12 Challenges of IR Establishment in Ghana**

According to Lamptey & Corleley (2011) Establishing IRs in Ghana presumably could be the pad that will launch the Academic and research Libraries into the publishing of scholarly

communication and the free flow of scholarly work. There are therefore some challenges in pushing for its establishment. For instance, Asamoah-Hassan (2009) argues that it is difficult convincing university management, researchers and academics that it is necessary to have IR and get them to agree to plan and support it on long term basis. Funding to start and to sustain the IR and reliably electricity supply, and reliable and good internet connectivity are major issue and also permissions for licensing and copyright issues and resistance from computer phobia of some faculty and researchers (Lamprey & Corleay, 2011).

### **2.12.1 Challenges of digitization of library resources**

As cited in International Journal of African & African American Studies (Fabunmi et al,2006) digitization of library resources poses a great deal of challenge to the major stakeholders, that is, the library management, employees and library users. The library management has to source for fund for the digitization project. It is often easy to get sufficient fund for the project, as the required fund can be enormous. There are several donor agencies. In United States of America (USA), in 2000, the Institute of Museum and Library Services provided the Ewell Sale Stewart Library of the Academy of Natural Sciences a grant to digitize the early works of the academy; and make them accessible to the public.

Fabunmi et al (2006) asserts that most academic libraries face unmanageable budgetary demands. The financial constraints have to be taken into consideration. This is essential so as to be able to continue with the digitization exercise after the conversion program. Clear cut decisions have to be taken on the form of digitization and institutional policies to adopt (Swam and Brown,2005). Where the fund available is grossly inadequate, the library can be linked to existing digital libraries. It is also possible for t library to select and digitize additional materials. The proportion of the additional materials to be digitized will therefore depend upon the

available fund. The problem of most digitizing efforts is that of inadequate fund and not that of technology. There should also be continuous flow of fund so that the project can be functional. Stefano (2001) and Westell (2006) advocated for allocation of adequate fund for the digital conversion by the appropriate authorities. The importance of the project makes this a very good suggestion. The academic libraries are often located in research environments, where students, faculty and other researchers will depend on the library for timely information.

Management of the digitization project entails policy initiation, setting priorities and planning. These are challenging tasks for the management and handlers (Stefano, 2001; Ezeani, & Ezema, 2011). The library management needs to consult libraries that had digitized their materials so as to learn from their experiences. This will guide a lot while formulating policies on the digital project. A planning committee has to be set up. It is the responsibility of this committee to draw plans and budget for the project. The library management will also need to prioritize the different activities involved and assign each task to a committee. Time limits should be assigned for completion of each task (Ezeani, & Ezema, 2011).

Fabunmi et al (2006) advocates that the task of carrying along all the staff and guiding library users can be challenging. Some of the staff will like to resist change, particularly those that are not computer literate. It is essential for the library management to explain the essence of the project to them and arrange to retrain the employees so that they can participate in the project and remain functional in a digital library. Some of the library users will definitely find it difficult to search for materials in the digital terrain. It is good for library assistants to be available to render assistance. Orientation programs can be organized for these library users from time to time. This is very essential in academic libraries where the users can be many and are also regular users (Fabunmi et al,2006).

### 2.13 Conclusion

This paper has established that IR is an essential task in modern day libraries. If a library is to live up to current challenges, it has to go digital, that is, provide online services. This will enable it to preserve endangered library resources, improve the efficiency of information search mechanisms and enhance access to library resources for users. It is essential for the library management to provide policy guidelines and articulate plans for the exercise. Digital library, otherwise known as virtual library, has grown to a special field of study.



## CHAPTER 3: METHODOLOGY

### 3.1 Introduction

This chapter presents the research methodology. The first section of this chapter talks about the philosophical assumptions underlying the research, and then the next section deals with the research method. The third section presents an overview of the source of data collection that included interviews, observations and using secondary data sources. The remainder of this chapter is focused on data analysis and ethical considerations.

### 3.2 Research Methodology

In as much as the choice of a suitable methodology is vital for the conduct of a qualitative research, the philosophical assumptions underlying the study are crucial because they dictate the techniques that are employed in research. All social inquiries, whether quantitative or qualitative are based on some basic conjectures regarding what constitute legitimate inquiry and the appropriate research methods to be utilized. These can be assumptions about what reality is (ontological) or assumptions about knowledge and how it can be acquired (epistemological) (Krauss, 2005, Myers, 1997).

### 3.3 Research Paradigms

A theoretical paradigm may be defined as a collection of ontological and epistemological assumptions that constitute an abstract model within which a researcher designs and conducts investigation (Bhattacharjee, 2012). This means that paradigms provide the underlying principles

and procedures that the researcher employs in terms of what to study, how to study it, what theory and methodology to use and how to interpret the outcome of the study. The recognition of theoretical paradigms in qualitative research is especially important because qualitative research is conducted and/or evaluated under different assumptions from quantitative research (Krauss, 2005). In general, three philosophical paradigms (interpretive, positivist, and critical) are employed by IS researchers. To the researcher these paradigms are like personalized goggles that shape perceptions about a phenomenon and affects how to make sense of the observed phenomenon (Bhattacharjee, 2012). Paradigm shapes the research and the cognition of the researcher (Bogdan & Biklan, 1982). Therefore the choice of “an appropriate paradigm is a researcher’s personalized decision” (Panagiotopoulos, 2011), but according to Kinash (2006), paradigms are contextualized beliefs held by social groups, hence a researcher’s choice of a paradigm may also be a product of the mindset of the social group the researcher belongs at a particular time.

### **3.4 Some Common Paradigms for Qualitative Research**

#### **3.4.1 Positivism**

Positivist paradigm assumes that reality (truth) about a phenomenon is unitary and this reality can only be established through direct observation and measurement. In effect, positivists hold the view that knowledge construction should be confined to what is observable, measurable and should be independent of the researcher and instruments employed. Thus, the positivists believe that it is possible for a researcher to objectify the reality of a phenomenon being studied, by being detached from it. They argue that the means of getting truth to understand the world or a phenomenon well so that it might be predicted and controlled is science. Positivists use

deductive reasoning to postulate theories that are empirically testable. The positivist epistemology is normally employed in quantitative research (Bhattacharjee, 2012, Greener, 2008, Myers, 1997, Sobh & Perry, 2006).

### **3.4.2 Interpretivism**

Interpretivists hold the view that reality is a social construction subject to the understanding and interpretations of the individual (Walsham, 2006). Therefore the best way to ascertain reality or understand a phenomenon is to view it in its context. They argue that since each person experiences from his or her own perspective, the reality experienced by each person is unique. There are therefore multiple realities constructed by the people who experience a phenomenon of interest. To the interpretivist, it is pointless trying to establish truth in an external and objective sense because all researchers are unique; so their personalized perspectives are bound to bias their research (Mack, 2010, Sobh & Perry, 2006, Walsham, 1995). The use of the interpretive paradigm in social research is to help the researcher understand and explain these contextualized realities as is experienced and understood by the actors, of which the researcher is a part. The use of interpretive approach, among IS researchers is on the rise (Currie & Swanson, 2009).

### **3.4.3 Critical Theory**

The basic tenet underlying critical theory is to critique and resolve socio-economic inequalities arising as a result of race, social class, culture, religion, gender and sexuality (Fay, 1987). Critical theorists hold the view that subjugation, alienation and other forms of dominations in society are products of conception. Thus, “social reality is historically constituted and that it is produced and reproduced by people” (Myers, 1997). Critical theorist belief that ideological subjects can deliberately act to change their socio-economic conditions, however they also recognize that their ability to change is inhibited by various forms of social, cultural, and

political domination. Research using this paradigm attempts to emancipate “its subjects from ideologically frozen conceptions” (Comstock, 1982), by exposing the constraints of the status quo and empowering its subjects in order to eliminate the causes of these social inequalities.

### **3.5 Underlying Assumptions**

This research is undertaken in the context of a developing country, understood and explained from the perspective of the various stakeholders involved in the institutional repository at University of Ghana. The researcher is an employee of the University and the outcome is the meaning that the actors make of the digitization and IR. This means that the outcome of this study is contextual i.e. the subjective meaning from the perspective of the stakeholders. The outcome may also be biased by of researcher’s association with the organization. This stance by the researcher is what is known in qualitative research as interpretive paradigm (Bhattacharjee, 2012). Interpretivists believe that there is no unitary objective reality but rather there are multiple realities of a phenomenon which are constructed by the people who experience the phenomenon. Therefore the best way to understand a phenomenon is to view it in its context, and from the point of view of the people who experience it (Krauss, 2005). The design and use of information technology in the public sector is deeply embedded in social contexts and influenced by other external factors such as politics, and culture. Any attempt to disregard these factors in IS research in the public sector will yield an incomplete outcome. Today, there is a gradual rise in the IS research that adopt interpretive paradigm (Currie & Swanson, 2009) and this paper seek to contribute to this category of qualitative information system research.

### **3.6 Research Method**

According to Myers (1997) research methods, may be categorized broadly into qualitative and quantitative research methods. There are other forms of categorization of research methods such as: action research, case study research, ethnography and grounded theory used in qualitative investigations. The choice of particular research method is influenced by the underlying epistemological assumptions and does inform data collection techniques the researcher employs. In order to achieve the objectives of this research, the researcher will adopt a case study research method.

#### **3.6.1 Quantitative Research**

Quantitative research is associated with the measuring of numerical data, testing of hypothesis and generalization of data to explain cause-and-effect relationships (Bhattacharjee, 2012). The natural sciences were first to use these methods of inquiry to study natural phenomena (Greener, 2008). Quantitative researchers hold the view that reality is reasonably not contextual and can be externalize from context and studied objectively using scientific methods. Positivism and objectivism are the main epistemological assumptions underlying quantitative research. Several quantitative techniques are now being used in social sciences; examples are survey methods, laboratory experiments, formal methods and numerical methods descriptive (Kuhn, 2012, Myers, 1997).

#### **3.6.2 Qualitative Research Methods**

Social sciences researchers developed qualitative methods of inquiry as a means to investigate social and cultural phenomena. Examples of qualitative methods are action research, case study research and ethnography (Myers, 1997). Qualitative research attempts to understand and explain

people's construction of reality based on their experiences and interpretations (Merriam, 2009, p. 13). In general, qualitative research is based on a relativistic and interpretive ontology (choice of method) that posits that there is no objective reality, instead there are multiple realities created by the people who experience a phenomenon. Theories are generated in qualitative research through inductive reasoning and the sources of data include observation and participant observation (fieldwork), interviews and questionnaires, documents and texts, and the researcher's impressions and reactions (Myers, 1997).

### **3.7 Choice of Research Methodology**

The choice of methodology in academic research such as in this case depends on various considerations including 1) the general belief that a particular phenomenon is best investigated when a specific methodology is employed; 2) a particular methodology is in congruence with the researcher's or the sponsor's orientation; 3) a particular methodology is in congruence with the researcher's academic or personal experiences (Garner, Wagner, & Kawulich, 2009). This research adopt a qualitative research methodology because: (1) it is in congruence with the researcher's ontological and epistemological orientations and (2) many researchers belief it is the best way to investigate a social phenomenon such as IS implementation in the public sector (Benbasat, Goldstein, & Mead, 1987, Fielden, 2003, Myers & Newman, 2007). According to Kaplan & Maxwell (2005) the power of qualitative research methodology can be found in the way they help to understand the meaning and context of the phenomena being studied.

### **3.8 Qualitative Methods**

The main qualitative research approaches in information systems (IS) research according to Myers (1997) are case research, action research, ethnography and grounded theory. In the following paragraphs we highlight these qualitative methods.

#### **3.8.1. Case Study Research**

Case study research is an in-depth examination of a phenomenon in its natural setting over an extended period of time, using multiple methods of data collection to obtain information from one or a few entities (people, groups, or organizations) (Benbasat et al., 1987). Data collection methods employed in case study research include interviews, personal observations, and internal or external documents. Case studies may be employed by positivists to test hypothesis in quantitative research or interpretivists and critical theorists for theory building in qualitative research (Bhattacharjee, 2012). Case research method is particularly appropriate in areas where research and theory are at their infant stages and for multifaceted phenomena where the experiences of the actors are essential and the context of action is significant (Benbasat et al., 1987). The use of case study methodology in IS research is common (Benbasat et al., 1987, Chandrasekhar & Ghosh, 2001, Kaduruwane, 2012, Thomas, 2010). In acknowledging the significance of case study in IS research Myers (1997) argues that case study research method is particularly well-suited to IS research, since the object of our discipline is the study of information systems in organizations.

#### **3.8.2 Action Research**

Action researchers posit that the most effective way to understand a complex social phenomenon is to introduce interventions or actions into the phenomenon and then observe the effects of the

interventions or actions on the phenomenon (Bhattacharjee, 2012). An action researcher is often part and parcel of a social context such as a community, an organization or a participant of an endeavor who initiates interventions to deal with real world problems (Benbasat et al., 1987, Bhattacharjee, 2012). For example an expert or an organizational member may bring in new business policies or new technologies, into an organization in response to a real problem such as loss of productivity or dwindling revenue. The choice of interventions in action research must be based on theory, which should explain why and how such interventions may lead to the desired change (Bhattacharjee, 2012). Action research does not feature prominently in IS research and there is a suggestion by Kaplan, Truex, & Wastell (2004) that action research would be more attractive for conventional IS researchers and doctoral students.

### **3.8.3 Ethnography**

Ethnography is a qualitative research design inspired by anthropology which gives emphasizes to the importance of investigating a phenomenon within its cultural context (Bhattacharjee, 2012, Dawson, 2002). Ethnographic researchers hold the view that human beings are best understood from the perspective of their culture or their way of live. Therefore ethnographers usually immerse themselves in the culture of the people in order to collect data (Dawson, 2002). Data may be collected overtly or covertly for an extended period of time, by watching what happens, listening to what is said, and,/or asking questions through informal and formal interviews, collecting documents, artefacts and so on to explain the issues that are the emerging focus of inquiry (Bhattacharjee, 2012, Hammersley & Atkinson, 1995). The researcher must narrate his or her experience in great detail so that readers may experience that same culture without necessarily being there (Bhattacharjee, 2012). Ethnography has been used extensively in IS

research in organizations, from the study of systems development to the study of information technology management (Myers, 1997).

### **3.8.4 Grounded Theory**

Grounded theory is an inductive method of generating theories about a social phenomenon that are grounded in empirical data (Bhattacharjee, 2012, Myers, 1997). This means that theories generated through this method have their foundation in the observed or empirical data. Grounded theories usually work from the known to the unknown. In grounded theory, qualitative data collection methods such as interviews, observations, focus groups, and documents are employed together with a comprehensive literature review which takes place throughout the data collection process (Dawson, 2002). According to Dawson (2002) one of the strengths of grounded theory lies in its flexibility which enables the researcher to accommodate new emerging issues that the researcher may not have thought about previously. The popularity and usefulness of grounded theory in IS research has been stated in a number of IS papers (Kaplan et al., 2004). For example Myers (1997) acknowledge that grounded theory approaches are becoming increasingly common in the IS research literature because the method is extremely useful in developing context-based, process-oriented descriptions and explanations of the phenomenon.

### **3.9 Choice of Case Study Research**

Since the object of this inquiry is a contemporary issue in the formative stages and in a social context, case study methodology is seen as the most appropriate method to use for the investigation. Case study research involves the use of multiple data collection methods such as interviews, personal observations, and internal or external documents to obtain information from

one or a few entities (people, groups, or organizations) (Benbasat et al., 1987). Case study in the opinion of Myers (1997) is particularly well-suited to IS research, since the object of our discipline is the study of information systems in organizations. In fact, the IS field is shifting from technological to social, managerial and organizational questions, and as a result more interested in how context and innovations interact (Benbasat et al., 1987). The interpretive paradigm which is the epistemological assumption underlying this study is considered a suitable philosophical approach of case research (Bhattacharjee, 2012).

The case study selected for this study is the digitization of institutional repository at University of Ghana. Digitization and IR are relatively new technologies in higher educations in developing countries especially sub-Saharan Africa. The choice of this project as a case study to investigate IS acceptance in a developing country is therefore in the right direction. Benbasat et al. (1987), explains that using a case study such as this would enable the researcher to answer the “what”, “how” and “why” questions surrounding the implementation process. It is also believed that the case research strategy is well-suited to capturing the knowledge of stakeholders and developing theories from it (Benbasat et al., 1987). The researcher is an employee of the case study organization as such access to important data and information will be faster and this will help facilitate the whole investigation process.

### **3.10 Sources of Data**

Since this is a case study research, the data collection process involves the use of multiple sources and techniques. The techniques used for data collection include document analysis, observation of physical artefacts and interviews. The researcher interviewed users and non-users of IR which includes: students, faculty and researchers at the university of Ghana and also staff at the Balme Library who directly is involved in digitization and IR. The use of multiple tools

and techniques of data collection is supposed to add texture, depth, and multiple insights to the analysis and enhance the validity or credibility of the results obtain from this study.

### **3.10.1 Document Analysis**

Document review a major data collection method employed in the inquiry. Bowen (2009) defines document analysis as a systematic procedure for reviewing or evaluating documents—both printed and electronic (computer-based and Internet-transmitted) material. The researcher reviewed a variety of existing sources (e.g., Zeuschel OS 1400, theses and dissertation, and other written artefacts) with the intention of collecting independently verifiable data and information. The documents reviewed were mostly printed materials which were guidelines to be followed when digitizing or uploading contents to the UGSpace.

### **3.10.2 Observation of Physical Artefacts**

The institutional repository and digitization equipment were already in place on 3<sup>rd</sup> May at the time of study and so there was an opportunity to undertake direct observation of processes and procedures. My observation therefore was aimed at the physical artefacts of the digital process. A physical artefact is any object made by human beings, especially with a view to subsequent use. Some of the physical artefacts observed are the digitization machine (Kabis system), scanners and equipment

### **3.10.3 Interviews**

An interview guide was design to help in the various interviews I conducted with faculty, students, researchers and staff of Balme Library who are involved in the use of IR This is to make sure the interviews remain focus on issues relevant to the achievement of the research objectives. Responses from interviewees were mainly audio-recorded and writing. The

interviews were conducted between 1<sup>st</sup> May and 20<sup>th</sup> May. The interviews started with respondents at Balme Library after then I interviewed students, faculty and researchers all from University of Ghana. Some of the respondents interviewed recommended other respondents to me who directly or indirectly use IR. The researcher succeeded in interviewing most of the recommended respondents however a schedule appointment with a faculty member failed (decline to take the interview). This process of identifying the appropriate respondent through the recommendation of other respondents is known as snowball sampling. Bhattacharjee (2012) explains that in snowball sampling, the researcher identifies a few respondents that match the criteria for inclusion in the study, and then ask them to recommend others they know who also meet your selection criteria.

On the average every interview took about 20 minutes. Each interview particularly an audio-recorded one was transcribed immediately after the interview for safety reasons. However before the interviews were transcribed each was examined carefully to make sure that the responses were relevant to the research objectives. The questions covered four thematic areas: Users Experience; Contribution of users; Users Opinions about IR; and the challenges facing the institutional repositories in University of Ghana.

**Table 3.1 List of Interviewees**

Interviewee	Number of People	Number of times Interviewed
Faculty	2	1
Students	3	2
Researchers/ staff	3	2

### 3.11 Data Analysis

Qualitative data analysis is the process of making sense out of large amount of data collected by reducing it to the appropriate form (Creswell, 2009, Kawulich, 2004). This sense making process is achieved “through an iterative process that starts by developing an initial understanding of the setting and perspectives of the people being studied. The understanding is then tested and modified through cycles of additional data collection and analysis until an adequately coherent interpretation is reached” (Kaplan & Maxwell, 2005). Miles & Huberman (1994) define qualitative data analysis as an interactive model consisting of three simultaneous flows of activity: data reduction, data display, and conclusion drawing/verification.

Various modes and techniques such as hermeneutics, content analysis, discourse analysis, grounded theory analysis, semiotics, and approaches that focus on narrative and metaphor (Kawulich, 2004, Merriam & others, 2002, Myers, 1997, Thorne, 2000) exist for data analysis in qualitative research. In this study the hermeneutic mode of data analysis was employed.

Hermeneutic analysis is a name for various methods of analysis, which are based on interpreting. The strategy forms an opposite to those research strategies which stress objectivity and independence of interpretations in the formation of knowledge. Hermeneutic research includes various different approaches. Methods of analysis may also vary, and in different disciplines discipline-specific methods exist for interpreting phenomena. Hermeneutic analysis enables you to elicit an in-depth understanding of meanings of, for example: human practices, culture, works of art and texts. Understanding is produced through systematic interpretation processes (Routio,2007). Bhattacharjee (2012) defines hermeneutics as an art, theory and practice of interpretation. According to Bleicher (1980) hermeneutics can be applied as both an underlying philosophy and a specific mode of analysis. When applied as a philosophical approach to human

understanding, hermeneutics provides the philosophical underlying for interpretivism and when used as a mode of data analysis it is concerned with the meaning of a text or text-analogue (Myers, 1997). A text-analogue is anything that can be treated as a text, such as any human artefact, action, organization or culture. In this study data from multiple sources are synthesized to identify themes and patterns which were subjected to the personal interpretation of the research to come out with the findings. This was done in the light of the underlying assumptions employ in this research.

### **3.12 Ethical Considerations**

This part talks about what to do to guarantee quality, honesty, confidentiality, openness, respect for intellectual property and integrity relating to this research. This starts with general ethical considerations, right to the analysis of the moral principles adopted to provide anonymity to the respondents.

#### **3.12.1 Ethical Issues**

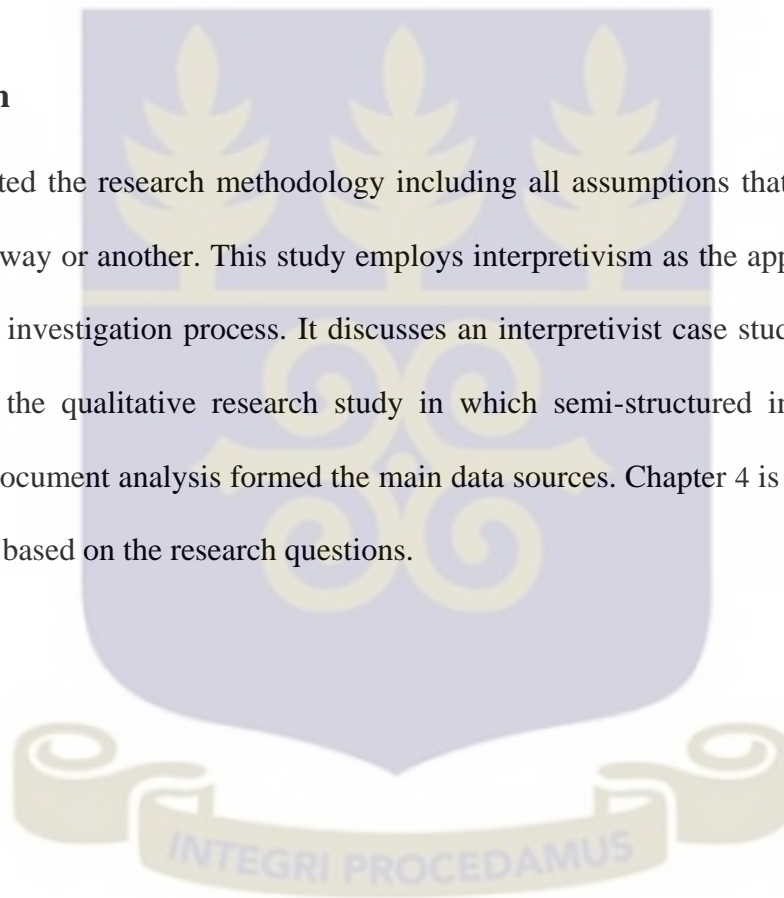
According to Creswell (2009) ethical issues may arise at various stages of a research and so researchers must anticipate them. For example: (1) during data collection, it is important to respect the participants and the sites for research and; (2) ensure that the study protect the anonymity of individuals, roles, and incidents during analysis and interpretation.

The first thing done to guarantee participant confidentiality is the provision of a consent form that stipulates the purpose of the research, the rights of the participant and the obligations of the researcher relating to information collected from participant. This was signed after the interview and the participant is given a copy. The researcher also employed a script that was read before an

interview stating what the interview was about and extent to the information given would be processed and used. These two events provided enough trust and guarantee for the participants. The interviews were conducted in an environment of the respondent's choice, to ensure their comfort. The research respected intellectual property by referencing and acknowledging all authors whose materials and work were included in this study.

### **3.13 Conclusion**

Chapter 3 presented the research methodology including all assumptions that would impact on the outcome one way or another. This study employs interpretivism as the appropriate paradigm as be used in the investigation process. It discusses an interpretivist case study as the approach used to conduct the qualitative research study in which semi-structured interview, informal discussions and document analysis formed the main data sources. Chapter 4 is used to submit the research findings based on the research questions.



## **CHAPTER 4: CASE STUDY FINDINGS**

### **4.1 Introduction**

Chapter 3 discussed the various research paradigms, the primary research methodologies and the data gathering techniques that were chosen for this research. The chapter also discussed the research participants that were chosen through purposeful sampling. It also discussed the data analysis approaches and ethical issues adopted for the study. The interpretive research paradigm utilizing case study methodology and multiple collection techniques including interview, document analysis, and observation within the interpretive case-study research methodology was used. This chapter presents the background of University of Ghana, the case study organization and the findings to the research questions outlined in the introduction.

### **4.2 University of Ghana - The Case Study Organization**

Established in 1948 the Balme Library is the main library of the University of Ghana. The Balme Library which manages the IR of the University of Ghana was named after David Mowbray Balme the first Principal of University of Ghana. In addition to the Balme Library, there are other libraries in the various Schools, Institutes, Departments, Halls of Residence and the Accra City Campus which form the University of Ghana Library System.

The central location of the Balme Library, its facilities and the scope of the coverage of the collection makes it a very important and vital part of academic life on campus. The collection which consists of both electronic and print resources provides essential background reading for the courses taught.

The Library provides excellent facilities and products. Products include reference materials, text books, journal databases, study carrels, library instruction. Facilities include the 24 hr reading room, Research Commons (RC), Knowledge Commons (KC), printing and binding services, photocopy services and a networked environment with computers.

The Library is dynamic and continues to adapt to changing technologies and patron information needs. Library management and staff are committed to serving the University community.

With the University of Ghana established concurrently with UGBL in 1948 and one can imagine the scale of documents and records generated since. The records of students, senior members, principal officers, policies, acts, and minutes of various kinds can be difficult to grasp without proper management. The University of Ghana Library Systems (UGLS), Archives and other Departments and Units are repositories for heritage materials as well as rich local, national and international resources. Without proper organization and planned preservation, information in these documents cannot be easily accessed and they can be lost due to deterioration. This led to the establishment of a digitization and repository unit in 2008. This is in line with University of Ghana Act, 2010 (Act 806) that obliges the university to provide information to the public. The Public Records and Archives Administration Act 1997 (Act 537)", also obliged the University to create, use, maintain and dispose of records. In all, the essence is to provide access to information and preserve records in the University.

#### **4.2.1 University of Ghana Digital Collections (UGSpace)**

UGSpace is the institutional repository of the University of Ghana. UGSpace is an open access electronic archive for the collection, preservation and distribution of digital materials. UGSpace was established to facilitate the deposit of digital content of a scholarly or heritage nature to

ultimately share, preserve and promote the intellectual output of the University in a managed environment.

Fig 4.1 Interface of University of Ghana Digital Collections (UGSpace)



Source: [ugspace.ug.edu.gh](http://ugspace.ug.edu.gh)

According to Barfi & Kwadzo (2014) the UG Library System has automated most of its library processes and has embarked on digitizing some of its old materials, such as heritage materials of 17th century in the Africana section of the library, (which is on the Internet) (<http://ugspace.ug.edu.gh/handle/123456789/1>). It has also digitized some past issues of newspapers both on microfilm (dated from 1950s) and some print ones and has started digitizing theses submitted to the University. In addition, the University's Institutional Repository (UGSpace) which is being hosted by the Balme Library provides open access to the outputs of academic staff and research students which is also on the internet and available at

<http://ugspace.ug.edu.gh>. These outputs include research reports, papers, conference papers, theses/dissertations, journal articles, among others Barfi & Kwadzo (2015).

Table 4.1 Selected University of Ghana Repositories

Departments or Units	Collection /Repository
Balme Library	National Repository, Newspapers, Theses collection, University publications, Past Exams questions, pre-colonial document, microfilms, The Furley Collection are materials collected on the history of the Gold Coast and bequeathed to the Balme Library, University of Ghana.etc
University Archives	The administrative records include the personal files of resigned, retired and deceased senior members, senior and junior staff of the University and the Policy files, and council and committee records accumulated at the Registrar’s Office from 1948 to date
Institute of African Studies Archives	The administrative records include the personal files of resigned, retired and deceased senior members, senior and junior staff of the school, committee records from 1962 to date
University of Ghana Medical School Archives	The administrative records include the personal files of resigned, retired and deceased senior members, senior and junior staff of the school, committee records from 1962 to date
University Hospital	Patients and administrative records

<p>University of Ghana Digital Collections (UGSpace)- Balme Library/Academic Computing Unit and ORID</p>	<p>UGSpace is the institutional repository of the University of Ghana. UGSpace is an open access electronic archive for the collection, preservation and distribution of digital materials. UGSpace was established to facilitate the deposit of digital content of a scholarly or heritage nature to ultimately share, preserve and promote the intellectual output of the University in a managed environment.</p>
<p>Human Resources Directorate/Registrar's</p>	<p>The current administrative records- including personal files of senior members, senior and junior staff</p>
<p>Graduate School</p>	<p>Thesis and Dissertations</p>
<p>Public Affairs Directorate</p>	<p>University of Ghana Publications, Videos, Audio Tapes and photographs</p>

(Barfi & Kwadzo,2015)

### 4.3 Users Experience

In this part respondents were asked two questions concerning their experiences of IR and how University of Ghana IR service was made known to them.

#### 4.3.1 What is your experience of the institutional repository service of your institution?

Most of the respondents were aware of University of Ghana IR service and five of them were not aware of IR. Those who were not aware of the IR showed an eagerness to verify the IR service of UG. It revealed that respondents reported that they had accessed and searched their repository and actually some of the respondents had use the UG search engine and downloaded research

papers from the IR. This reveals a sign that IRs are as of now being effectively utilized by some cross-section in University of Ghana of which half of the population had contributed to repositories. Users were of the view that the university archives is the most suitable for the preservation and management of IR and are eager to help patronage this service; but IR team needs to do more broadcast and awareness and proper measures put in place. The rate of self-archiving according to users can increase if there is a proper guidance.

#### **4.3.2 Coming to know of IR service**

(How did you come to know about UG IR/digital repository?).

Some respondents stated that a three-day workshop on the theme “Providing practical guidance for effective digital collection programme” was organized for them by the Academic Computing Unit of the University, which introduced them to IR services at UG; thus through workshops/seminars and brochures/leaflets were given to them. Three PhD students learnt of the UGSpace through a web-link issued on the UG website. Indeed, even e-mails and the e-discussions of the university assumed imperative part to make clients mindful of institutional repositories whilst some came to know of the IR service through informal communication with colleagues. Other reasons for coming to know of the IR included the following:

- Searching the internet
- Being the member of the IR Committee
- Involved at the time of IR implementation
- Through orientation program

## **4.4 Contribution of users**

Three questions were asked to respondents of their contribution to UGSpace, reasons for contribution, reasons for non-contribution, types of documents likely to contribute to IR and reasons for contribution to IR in future.

### **4.4.1 Reasons for the contribution to IR**

(If you have contributed documents to an IR at your institution, please write your main reasons for doing?)

Respondents indicated that contributing materials to an IR was an “Easy and fast way to communicate research results” and also gave them a wider audience for documents” Crow (2002) summed up by saying the authors, gain visibility, and help users find information more easily; the potential benefits of institutional repositories extend to institutions, which increase their research profile, and funders, who see wider dissemination of research outputs. Others indicated that for the document to be preserved for future reference there was a need for an IR. This is in line with Lynch (2003) assertion that institutional repositories can facilitate greatly enhanced access to preserved traditional scholarly content by empowering faculty to effectively use the new dissemination capabilities offered by the network. Respondents also asserted that it helps meet other similar writers; by depositing their materials to the institutional repository it makes them discoverable to a colleague from another faculty who also has some guides related to citations. Without the existence of a repository this may have not been possible.

#### 4.4.2 Reasons for not contributing to the IR (barriers)

(If you have not contributed documents to the IR at your institution, please write your main reasons for not doing so?).

Respondents that revealed they have not contributed to the IR gave such reasons:

Table 4.2 Reasons for not contributing

Reasons for not contributing	
I do not know of my institution’s IR available to UG i.e. awareness creation is lacking	I do not have research materials or documents to contribute to the IR
I do not know of any other repositories (departmental/subject/cross- institutional, etc.)	I keep my materials on my own website” and “I do not have time to contribute documents”.
Others revealed they would like to make their documents available to a particular groups of persons only	

The main reasons gathered from the field were personal factors, including lack of time, lack of knowledge/awareness of the issues, lack of ready user support and lack of information on copyright issues. To users if some of these issues are addressed it will propel their interest.

After an analysis of the results from studied documents, revealed the following examples to identifiable barriers and overcoming such barriers as stated by Melanie et al (2008).

##### 4.4.2.1 Identifiable Barriers and Overcoming Barriers

Below are some examples for overcoming barriers and providing incentives

Table 4.3 Identifiable Barriers and Overcoming Barriers

Identified barriers	Interventions for potential user support, communication and technology	Example solution(s)
Unclear copyright guidelines	User support	Design a suitable guidelines copyright mechanism and identify support to assist users
Not aware of any repositories	User support and communication	promote the repository repositories communications to potential users and support staff.
Satisfaction of contributing	User communication	Attempt to overcome contributing cultural attitudes. Promote altruistic reasons for sharing to different users.
support freely and easily available	User support	Identify and establish easily available an adequate support network.

#### 4.4.3 Non Contributing Respondents

Respondents who indicated they don't contribute were asked of the likely reasons they would contribute to the UGSpace in future (What are some of the reasons that would make you more or less likely to contribute to the IR in future?).

Below are the reasons given by students, researchers and faculty members:

Table 4.4 Reasons for contributing in future

Reasons for contributing in future	
For the preservation of documents for the future use and reference.	Support easily available and is free for faculty and contributors
To enhance University of Ghana recognition	If they introduce a peer-reviewers by a specialist panel to this would guarantee quality
If University of Ghana makes it a criteria for promotion and makes it compulsory for faculty	The motivation from fellow staff contributing in my subject field of specialty and is a criteria for financial award

#### 4.5 Users Opinions about IR

In this section two questions were asked of respondents about their opinion regarding quality control mechanisms and copyright of the IR.

##### 4.5.1 Quality control mechanisms

(What type of review or quality control mechanisms would you expect in your ideal institutional repository?).

Interviewee's preference to "no review" was not the choice for most. They very much accepted Peer review. Other respondents were of the conviction that only certain documents ought to be peer-reviewed. Nearly half of the respondents, mostly postgraduate students were not in favor of review. From the study, the researcher notice that it was the postgraduate students who were very much in favor of peer-review as it was first time for some for their work to be published. This

according to Sawant (2012) is critical to the success of any IR institution as contributors would want to know their flaws and success. On the other hand, they were in favor of review with a selected group of peers.

Lack of awareness of review or quality control mechanisms was stated by some of the respondents. Nonetheless, they indicated that only peer-reviewed and authentic documents should be included in the UGSpace.

#### 4.5.2 Opinion regarding copyright

(In your opinion who should own the copyright of your documents after submitting them to the IR?).

Contributors to IR wanted to hold the copyright of the materials they submit to UGSpace; this was revealed by more than half of the respondents. On the other hand, some indicated that the institution owns the copyright as materials are created during the course of employment this to some is a daisy situation. A joint ownership (the author and the institution jointly own such material) was revealed by 2 respondents as the other of some universities.

However some respondents were convinced that the institution holds the copyright of their material that they deposit in the IR.

Respondents that stated other reasons include:

Table 4.5 Ownership of Copyright

Ownership of Copyright	
Jointly held by the individual and institution as long as the individual is in the service of the institution	the nature of the document needs to be consider. Not all document copyright should be jointly shared or owned
No copyright	The Parent body of the host

Institute or other publishers, as appropriate	I would think it should be free unless copyrighted by some journals, in which case they own the copyright
The original copyright owner	Public domain, with acknowledgement to the author/ contributor/facilitator

#### 4.6 What are the institutional repositories challenges facing the users?

This session was an interactive talk with the respondents of the study concerning challenges IR faces in the University of Ghana. What are the challenges facing the digital and institutional repository at University of Ghana? Interviewees stated the following:

- Lack of Electricity supply

One major challenge of developing countries like Ghana is the problem of electricity supply. According to respondents institutional repository development in Ghana has become much difficult and expensive in Ghana due to this problem. Fatunde (2008) is of the view that poor electricity supply is a major impediment to the operation and growth of information and communication technology in higher education. As indicated by him just a stream of day by day power generation spills inconsistently into the nation's academic establishments, rendering ICT frameworks useless. Also revealed by the interviewees poor connectivity has always affected the rate at which files are uploaded and can be downloaded by staff, researchers and students. Thus limited bandwidth doesn't support such nature of work.

- Difficulty in digitizing some materials

Interviewees bemoaned the difficulty in digitizing some materials be it torn or dusty. This doesn't give the true nature of the original even after preparing the document to be digitized.

Also is the increasing scholarly publication put on a CD. At times the CD-ROM drive of the computers purposed for scanning are non-functioning or faulty. Instance happened where the system couldn't open or read the CD provided.

- Viewing Files and accessibility

Respondents revealed a challenge of the UGSpace, claiming users can't view excerpts of files or documents online. To them been able to view only after a successful download is an inability of the UGSpace; comparing to Emerald or Sage users preview documents before they download preventing users from downloading un-needed files. Frequent shutdown of UGSpace was also a challenge. Respondents claim first time users who experience this, would be deterrence to their future usage or contributing to the IR.

- Lack of awareness

Respondents testified to the lack of awareness of UGSpace among researchers and academics in the university community which to them extends to the nation's other academic and research institutions. Respondents claimed that as users are the final beneficiary the unfamiliarity of the IR makes their work not useful

- Inadequate advocacy for open access in Ghana

Respondents were of the view that if UGSpace engages in an advocacy campaign it will promote the development of it Electronic Scholarly Publishing. The staff themselves testifies to the low level of awareness to students, faculty and researchers. According to Christian (2008) stakeholders or advocates become very familiar with the concept if there's an effective advocacy.

- Policy

Interviewees bemoan the lack of clear policy as to which document to digitize. They claimed this has hindered their work in knowing their boundaries to digitization as there are no objectives to follow what to be digitized. Policy in repository stipulates the type of documents or heritage material that would be authorized for digitization and this policy can't be overlooked (Mapulanga, 2012).

- Unavailability of Needed Materials

Respondents revealed that at times most materials that users request for in the library, especially theses and dissertations are relocated for digitization. Some cases arise whereby a material is not yet uploaded and at the same time not available in the library (Eke,2011). This keeps the library users stranded if they are in desperate need of such materials.

#### **4.6.1 What recommendations would you suggest?**

Interviewees were asked of recommendations they would suggest to these problems.

IR respondents recommended the following

- Faculty interest would increase the patronage of UG IR.
- Skilled personnel to add to the existing staff to boost the work output
- IR should be incorporated in the orientation programs of students, guest lecturers, researchers and faculty members.

## CHAPTER 5: DISCUSSION OF FINDINGS

### 5.1 Introduction

Chapter four presented the case study findings of this study. This chapter presents the discussions of the research findings. The discussion is based on the two research questions: what are the experiences and opinions of users and non-users of institutional repository developed in Universities; and the reasons for contributing or not contributing documents to the institutional repository.

### 5.2 Users Experience

The present research findings provide a picture of institutional repositories from the users' perspectives. The concept of the institutional repository and its benefits has not penetrated well into academic institutions such as universities and colleges.

The results demonstrate that potential users who are aware of IRs show a stronger tendency to answer the questionnaire than those who are completely unaware of the concept. This shows a lack of awareness of IRs among members of institutions, so urgent attention is required to publicize repositories. Also, those who are aware of IRs have contributed a smaller number of documents to their IR. Thus it can be concluded that there is a strong need to publicize IRs and to encourage self-archiving practices in the user community.

Respondents in the study stated that a three-day workshop on the theme "Providing practical guidance for effective digital collection programme" was organized for them by the Academic Computing Unit of the University, which introduced them to IR services at UG; thus through workshops/seminars and brochures/leaflets were given to them. Three PhD students learnt of the

UGSpace through a web-link issued on the UG website. Indeed, even e-mails and the e-discussions of the university assumed imperative part to make clients mindful of institutional repositories whilst some came to know of the IR service through informal communication with colleagues. Other reasons for coming to know of the IR included the following:

- Searching the internet
- Being the member of the IR Committee
- Involved at the time of IR implementation
- Through orientation program

During the study, those who had learned about their IR did so through workshop organized by the University as previously indicated whilst others through a link provided on the institution's website. This is in contrast to the study by Wojciechowska (2007). He conducted a survey of the mathematical and computer science community in 12 research centers in France. There were 128 persons who participated in the survey. They were essentially lecturers and researchers. When the question was asked of the participants "How did you learn of the possibility of archiving your publications in institutional open archives?" the highest percentage of respondents (42 percent) mentioned "Colleagues" as a source of learning about the institutional open archives. This was followed by 15.60 percent of respondents who mentioned "Information from the library". However, in the present study, "Colleagues" as a source of information achieved third position (27.57 percent).

Kim (2006) conducted a survey based on a sample of 31 professors whose materials were deposited in the DSpace IR of major research universities in the USA. He found that all 31 professors had their material in their institution's IR. In all cases the library had deposited this

material, in some cases without their knowledge. Twenty-two respondents (71 percent) had deposited their research/teaching materials in other publicly accessible websites such as personal web pages, disciplinary repositories, and research group/laboratory/center websites.

Sawant (2012) conducted a survey on 250 researchers and lecturers and also found out that e-mails and the e-forums of the institutions played important role for making users aware of institutional repository (34.59 percent, i.e. 64 respondents) and 52% (91) respondents learned about the IR service through a link provided on the institution's. Respondents also came to know of the IR service through informal communication with colleagues (27.57 percent, i.e. 51 respondents). The remaining respondents learned about the IR service through seminars/workshops (8.11 percent, i.e. 15 respondents) and brochures/leaflets (5.41 percent, i.e. ten respondents) distributed by IR staff regarding the IR service.

In the present study less than half of the respondents had contributed to their IR and about half had contributed to other websites such as emerald, sage publications, sci-direct, subject, cross-institutional and departmental repositories and their own websites. In Ghana, IR managers should take the initiative to deposit materials on behalf of lecturers, as suggested in Kim's (2006) and Sawant (2012) study. If this practice is followed, Ghana repositories will flourish soon. The motives for contributing to repositories are more or less the same (Sawant, 2012) in Ghana as in other countries.

### **5.3 Contributing to IR**

In his survey, Kim (2006) found that preservation was the most important reason for contributing to an IR. Similarly, in the present study, preservation of documents for the future was found to be the most likely reason for contributing to an IR in future. However, Bates et al. (2006) found that

support being freely and easily available (40.9 percent) was the reason that would make a higher percentage of participants much more likely to contribute in the future than any other reason.

In the present study respondents indicated that contributing materials to an IR was an “Easy and fast way to communicate research results” and also gave them a wider audience for documents” Crow (2002) summed up by saying the authors, gain visibility, and help users find information more easily; the potential benefits of institutional repositories extend to institutions, which increase their research profile, and funders, who see wider dissemination of research outputs. Others indicated that for the document to be preserved for future reference there was a need for an IR. This is in line with Lynch (2003) assertion that institutional repositories can facilitate greatly enhanced access to preserved traditional scholarly content by empowering faculty to effectively use the new dissemination capabilities offered by the network.

Respondents in the present study also asserted that it helps meet other similar writers; by depositing their materials to the institutional repository it makes them discoverable to a colleague from another faculty who also has some guides related to citations. Without the existence of a repository this may have not been possible. This is evident from the studies such as that of Watson (2007), who also investigated authors’ publishing behaviors, attitudes, concerns, and their awareness and use of their institutional repository (Cranfield QUEprints). In response to the Watson’s question “What benefits do you see to putting a copy of your work in QUEprints?”, the highest number of respondents stated “Access to a wider audience”. Similarly, in the present study, this reason was stated by the second largest number of respondents.

In case of type of contribution, Kim (2006) found that 71.4 percent and 66.7 percent of respondents had self-archived lecture notes and course syllabi, respectively. Conference

presentations were found to be the third most frequently self-archived materials. In the present study a higher percentage of researchers/lecturers would contribute abstract materials and lecture notes, whereas others would contribute symposium/conference/seminar papers to the IR. About half of researchers/lecturers would contribute teaching materials to the IR. The fact that lecturers have a greater interest in contributing teaching material and reading lists was again evidenced by a JISC-funded survey conducted by Bates et al. (2006), who gathered views on the use of an institutional repository for the deposit of teaching and learning materials by academic staff in UK higher education (HE) institutions and to specialists in the field of teaching and learning (T&L).

In the present study, the same reason scored second position in rank. Bates et al. (2006) found that when they queried respondents about the types of review or quality control mechanisms participants would like in their ideal repository, over half of the participants wanted users to be able to add comments and ratings (58.8 percent), they wanted the subject content to be reviewed (57.0 percent), and they also wanted a technical and legal review (54.7 percent) to be carried out. Similarly in the present study, for a large number of respondents subject review remained important. This means that users are inclined towards providing open access documents to the IR, but they also want the content to be reviewed by a selected group of peers, which is really appreciable. Thus the concept of open access, which means free availability of the document to the public, is achieved to some extent in Ghana.

#### **5.4 Opinion of Users**

Contributors to IR want to hold the copyright of the materials they submit to UGSpace; this was revealed by more than half of the respondents. On the other hand, some indicated that the

institution owns the copyright as materials are created during the course of employment this to some is a daisy situation. However some respondents were convinced that the institution holds the copyright of their material that they deposit in the IR.

Respondents also stated the following

- A joint ownership (the author and the institution jointly own such material) was revealed by 2 respondents as the other of some universities.
- Institute or other publishers, as appropriate
- I would think it should be free unless copyrighted by some journals, in which case they own the copyright
- Jointly held by the individual and institution as long as the individual is in the service of the institution. the nature of the document needs to be consider.
- Not all document copyright should be jointly shared or owned.
- The original copyright owner

Foster and Gibbons (2005) interviewed 25 professors at the University of Rochester in order to investigate the factors affecting their contribution. In this study they identified reasons why faculty did not submit their content. The most important reasons were copyright infringement worries and disciplinary work practices (e.g. co-authoring or versioning). This has been a long held issue but to Foster and Gibbons (2005) the copyright issue should be in line with the university policy agreed by both parties (University and researchers/lecturers).

With regards to quality control mechanisms respondents' preference to "no review" was not the choice for most. They very much accepted Peer review. This is in line with Sawant (2012) study where 84% accepted to peer review of their documents by their universities. Other respondents were of the conviction that only certain documents ought to be peer-reviewed. Nearly half of the

respondents, mostly postgraduate students were not in favor of review. From the study, the researcher notice that it was the postgraduate students who were very much in favor of peer-review as it was first time for some for their work to be published. This according to Sawant (2012) is critical to the success of any IR institution as contributors would want to know their flaws and success. On the other hand, they were in favor of review with a selected group of peers. Lack of awareness of review or quality control mechanisms was stated by some of the respondents. Nonetheless, they indicated that only peer-reviewed and authentic documents should be included in the UGSpace.

## **5.5 Conclusion**

It has been established in chapter six that, there is lack awareness of IRs among members of institutions. There is therefore a strong need to publicize IRs and to encourage self-archiving practices in the user community. The study also emphasizes that contributing materials to an IR was an “Easy and fast way to communicate research results” and also gives lecturers and researchers a wider audience for documents. This helps them gain visibility, and help users find information more easily; the potential benefits of institutional repositories extend to institutions, which increase their research profile, and funders, who see wider dissemination of research outputs. Chapter 6 consist of the summary, conclusion and recommendation of the study.

## CHAPTER 6: SUMMARY, CONCLUSION AND RECOMMENDATIONS

### 6.1 Introduction

Chapter 6 presents the summary, conclusion and recommendations of the study. This chapter therefore summarizes the research findings and also discusses the contributions of the study and implications for management and research. Finally, it presents limitation and recommendations.

### 6.2 SUMMARY OF FINDINGS

The purpose for this research was to investigate the experience, contribution and opinions of users of institutional repository developed in University of Ghana. It also placed emphasis on the challenges facing the institutional repository at University of Ghana.

The study indicated that some of the users were unaware of University of Ghana institutional repositories and is a contributing factor for the inability of students and faculty to deposit their research materials. It must be stated that, those who were not aware of the IR were willing to see/check the IR service of UG. Major among those that were aware of the UG IR were:

- Searching the internet (UG website)
- Being the member of the IR Committee
- Involved at the time of IR implementation
- Through orientation program
- Through staff email advertisement

Users that are aware of the IR contributed to it because “Easy and fast way to communicate research results” and also gave them a wider audience for documents.” Crow (2002) summed up

by saying the authors, gain visibility, and help users find information more easily; the potential benefits of institutional repositories extend to institutions, which increase their research profile, and funders, who see wider dissemination of research outputs. Others indicated that for the document to be preserved for future reference there was a need for an IR.

The study found out that, users who aren't contributing are likely to contribute in future for such reasons:

- For the preservation of documents for the future use and reference.
- Support easily available and is free for faculty and contributors
- To enhance University of Ghana recognition
- If they introduce a peer-reviewers by a specialist panel to this would guarantee quality
- If University of Ghana makes it a criteria for promotion and makes it compulsory for faculty
- The motivation from fellow staff contributing in my subject field of specialty and is a criteria for financial award

Concerning quality control mechanisms user's preference to "no review" was not the choice for most. They very much accepted Peer review. Other respondents were of the conviction that only certain documents ought to be peer-reviewed. From the study, the researcher notice that it was the postgraduate students who were very much in favor of peer-review as it was first time for some for their work to be published.

Challenges that affected the digital and institutional repository at University of Ghana were: lack of policy guidelines for digitizing materials, lack of electricity supply, difficulty in digitizing some materials, lack of awareness creation and policy statement. If these issues are constantly

checked and controlled most digitization and institutional repositories project in Ghana will be more successful than it is now.

### **6.3 CONCLUSIONS**

Finally, the result of the study support what is found in literature by Watson (2007), Abruzzi (2015) and Lynch (2007), who argues that institutional repositories can facilitate greatly enhanced access to preserved traditional scholarly content by empowering faculty to effectively use the new dissemination capabilities offered by the network. This to them can't be achieved if the contributors and users are not aware. To them awareness creation is of paramount interest else the impact of IRs amounts to nothing. In considering the long-term survival of IRs, users are one of the important factors. This therefore calls for cooperative efforts among library professionals and the IR user community to reduce the hindrances encountered in the management and user involvement of IRs in Ghana.

### **6.4 RECOMMENDATIONS**

Based on the findings and preceding conclusion, the following recommendations have been made by the researcher.

- Recommendation on digitizing materials and upload: After identifying that IRs are important for any academic institution, it is recommended that academic libraries should design policies as a guide to all project or work on digitizing materials and uploading such materials to the IR.

Policy guidelines also helps academic institutions know which materials can be upload to the IR or digitize for public consumption.

- Recommendation for Awareness Creation: The purpose of IR is to “publicize” research materials to the academic community for use. The idea should be to increase community access to information to enable them to make informed research decisions. Awareness is created through seminars, online advertisement, workshops and exposure visits. Through awareness creation, the university community is able to re-evaluate and utilize its research collections, make itself informed, preserve collections, and strengthen information dissemination and sharing through perpetual news feed.

## **6.5 SUGGESTIONS FOR FURTHER RESEARCH**

Further research could be undertaken to investigate users’ experience, contribution and opinions among a cross-section of universities in Ghana to come out with comparisons among users’ (for a more acceptable research findings by a cross section of the users).

Finally, it was found that difficulties confronting academic libraries in developing nations are very not the same as the libraries in developed nations and there ought to be further research to establish these factors.

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