

**ASSESSING INSTITUTIONAL REPOSITORIES AS ENABLER OF
RESEARCH OUTPUT IN ACADEMIC INSTITUTIONS IN KENYA: THE
CASE OF KCA UNIVERSITY**

NJOROGE REGINA WAKARO

**A RESEARCH PROJECT PRESENTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF
MASTER OF LIBRARY AND INFORMATION SCIENCE, DEPARTMENT
OF LIBRARY AND INFORMATION SCIENCE, UNIVERSITY OF
NAIROBI**

2018

DECLARATION

This research project is my original work and has not been submitted for examination to any other university or institution.

Signature: _____ Date: _____

Njoroge Regina Wakaro
Registration Number: C54/83869/2016

This research project has been submitted for examination with our approval as the university supervisors.

Signature: _____ Date: _____

Dr. Dorothy Njiraine
Department of Library and Information Science

Signature: _____ Date: _____

Dr. Elisha Ondieki Makori
Department of Library and Information Science

DEDICATION

This research project is dedicated to our late beloved mum Nancy. You are an angel in heaven. We miss your love and guidance. I also dedicate it to my husband Sammy and my children Edwin and Macklyn. Thank you for your understanding for the many times I was away working on the project, your support and encouragement. You were my pillars. God bless you.

ACKNOWLEDGEMENT

My humble gratitude to Almighty God for giving me the strength to work hard. I am indebted to my supervisors Dr. Njiraine and Dr. Makori for their time and guidance during this study. I also thank my classmates, colleagues and friends for their support. To my employer, KCA University thanks for allowing me time to study. Finally, to my family, brothers and sisters, I acknowledge your support with gratitude. God bless you all.

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LIST OF ABBREVIATIONS AND ACRONYMS

IR	Institutional Repository
KCAU	KCA University
SPSS	Statistical Package for Social Sciences
KLA	Kenya Library Association
OPAC	Online Public Access Catalogue

ABSTRACT

The study assessed the role of institutional repositories as enabler of research output in academic institutions in Kenya with special reference to KCA University. Objectives of the study were to: assess the level of awareness of IR as enabler of research output in academic institutions, investigate the usage of institutional repository by the researchers in academic institutions, explore the role of the university management in adopting institutional repository in academic institutions and propose an appropriate model for embracing IR as enabler of research output in academic institutions. The study employed descriptive design where both qualitative and quantitative methods were used. Cluster and purposive sampling methods were used to get the target population. Data was collected by means of questionnaires and interview guides. Questionnaires were used to collect primary data from 62 postgraduate students, 88 fulltime academic staff and 14 library staff while an interview was conducted on the 6 senior library managers. Cluster sampling was used to select 62 postgraduate students while census sampling was used to select all the 88 fulltime academic staff. Library staff and senior library managers were purposively selected because of their knowledge and experience of using the IR. Content analysis was used to analyze the qualitative data from open-ended questions and interviews. Quantitative data in the questionnaires was analyzed through Statistical Package for Social Sciences and information presented in form of tables, percentages, pie charts and graphs for better interpretation. Findings from this study established that lack of skills to use the repository, lack of awareness, legal and copyright issues were the main challenges that hindered the adoption of institutional repository. The study also revealed that IR is an effective tool that supports widespread circulation of research work and increases value to published scholarly work. The study, therefore, recommended the need for promoting and marketing the platform through library orientation, workshops and trainings as a way of creating awareness. The study further recommended, the university management to review the available policies and to provide relevant guidelines on the use and access of materials. Management also to recognize the staff members who have deposited their work in the repository as a way of encouraging others. Finally, the study recommended an appropriate model for enhancing research productivity.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

The chapter presents the background to the study, statement of the research problem, objectives and the research questions. The study also gives the significance of the study, the scope and limitations as well as operational concepts and terms used.

1.2 Background to the Study

Research is increasingly becoming the mainstay of academic institutions in Kenya. The amount of scholarly output and the number of research thesis produced by academic staff and the students are some of the ways used to measure the research output in academic institutions in Kenya. Knowledge is a key resource and libraries should therefore, generate, supply and disseminate information in a continuous flow. Academic libraries have continued to play a vital role in the scholarly communication for many years. As published works have become restricted and expensive, the internet has enabled easy and cheap way of distributing research activities while avoiding publishers' fee. Libraries are acting as substitute publishers through the institutional storehouses (Jain, Bentley, & Oladiran, 2009: 1). Their main role is to enhance the activities of learning, teaching and research of their institutions. Due to the emergence of new technologies, libraries have changed the way new knowledge is created, preserved and disseminated. Libraries continually mobilize and provide access to local and global knowledge for political, economic and social development, therefore acting as gateways for information. Cullen & Chawner (2011: 704), points out that digital libraries have revolutionized whole of the global community.

Development of information and communication technology systems are rapidly becoming important components for guiding and conducting business in organizations. Organizations including academic institutions are embracing information communication technology-based solutions to provide quality services to customers. Academic institutions are adopting and implementing intensive information technology to handle information processes and services. A lot of research is done within the institution and this knowledge has not been preserved for future use. Organizations are now digitizing their resources for long term preservation and to be widely accessed. Universities and research centers are embracing institutional repositories to capture and

preserve the intellectual output of the institutions. Libraries are custodians of this new platform (Musangi & Sawe, 2013: 46).

Ezema (2011: 282), opines that advances in information technology have promoted openness of the library operations to the internet and growth of digital libraries to the whole world. IR changes scholarly communication by enabling academic institutions to enhance their reputation through visibility of research output of the academic staff. They are a major driving force of globalization with profound impacts on university libraries. According to Cullen & Chawner (2009: 57), digital repository is a digital collection of the scholarly product created by the researchers, teaching fraternity, staff members and student of the institution and accessible within and outside the institution with minimal if any restrictions to access.

Open access refers to access and use of research output available on the open internet, allowing any consumer to read, copy, download, transfer, print, search and connect the full text of these articles and use them for the right purpose without any barriers other than those attached to getting access to the internet as pointed out by Ezema (2011: 477). There has been an increase in the usage of open source software to access research output. The open access movement has brought new ways of disseminating scholarly work. Before the emergence of the institutional repository, scholars used to send their manuscript to the publishers where in most cases if accepted was published in a journal or a book. For those who could not afford the publishers fee, their work was kept in the computer drives or on websites which after some time was hard to trace or has been destroyed by the viruses. Institutional repositories have offered a solution to this problem (Musangi & Sawe, 2013: 48).

The usage of information and communication technology (ICT) in universities has boosted the standard of teaching and learning, scholarly output of the teaching staff and students as well as the managing the effectiveness of universities. Kenya has already developed policies that guide on the importance of ICT in universities. Cullen & Chawner (2010:133) states that, setting up an institutional repository in academic institutions is paramount and requires a commitment of financial and staff resources.

1.2.1 Context of the Study

KCA University was founded by the Institute of Certified Public Accountants of Kenya (ICPAK) as a training division of Certified Public Accountants (CPA). Decision to establish KCA University was in response to a research carried out by Chartered Institute of Public Finance (CIPF) in 1988 which indicated a growing gap between the demand and availability of accountants in the country. Initially offering training to accountants only. KCAU was granted a temporary charter to function as a university in 1999 by the then Ministry of Higher Education. In 2013, the university obtained a charter from Commission of University Education (CUE) to operate as a fully-fledged university (<https://www.kca.ac.ke>)

The University has maintained its fundamental objective of training CPA's in addition to offering diplomas, degrees for undergraduate and postgraduates. The vision for KCA University is to be a leading business university of excellence whose graduates confidently and competently serve the country, the region and the whole world. The university has embarked on research in its academic programs with the intention of producing and disseminating research outputs which are grounded in knowledge and innovation (<https://www.kca.ac.ke>)

Martin Oduor Library in KCAU provides the ultimate resources and environment for academic research for the university. The mandate of the library is management of academic information and knowledge in world class standards by enduring technological excellence in delivery of services to academic researchers, stakeholders and the student community. The library supports research by providing a learning environment which is supported by technology-based resources and customer-oriented services. Resources in the library includes: electronic books, institutional repository, online electronic catalogue, digital repository and e-newspapers. Print resources of books, journals and thesis are conveniently placed in the library. Access to print resources is through online public access catalogue (OPAC). The library has adopted open access (OA) practice which allows free access to university's and global research outputs. Martin Oduor Library has been ranked 1st runners up and 2nd runners up between the years 2011 to 2016 during the annual KLA maktaba awards (<https://www.kca.ac.ke/library>).

1.3 Statement of the Research Problem

Scholarly output is the mainstay of academic institutions in the whole world. Universities are ranked in the academic arena based on how much scholarly outputs are visible globally (Lwoga & Questier, 2014). Universities in Kenya are ranked poorly in the world despite a lot of research being done in the universities (Mosei & Mutula, 2016: 4). The major problem is how the research outputs are preserved and accessed. The competitive academic environment that organizations are operating in requires them to utilize and strengthen knowledge capital. Digital content exists arising from the intellectual and administrative activities of the faculty members of these institutions.

In the recent past, researchers used various methods to publish their research findings such as use of print journals and books, dissertations, theses, conference proceedings, projects and technical reports. These outdated methods restricted access of scholarly outputs because they were hosted by the libraries in the particular institutions under closed access and only available to the academic community and authorized members. (Ezema, 2011:324). Emergence of information communication and technology has brought a better way of preserving and accessing the scholarly materials.

The revolution of digital libraries and accessibility of open source platforms solutions such as Dspace has enabled most academic institutions in Kenya to adopt the repositories (Odongo, 2012: 1). Institutional repositories have become significant tools because they provide various opportunities for intellectuals, students, and academics to access and use information to generate new knowledge. They also make it possible for users to do research on individual computers and work stations despite their geographical locations.

Academic libraries are important organs in universities as they facilitate teaching, learning and research. Martin Oduor library in KCA University provides the ultimate resources and environment for academic research for the university. The library has adopted institutional repository to manage the digital content produced by the researchers and enhance scholarly communication among the university community and the world at large. Institutional repositories bring together all the works that have been done within the institution to a central place where they are accessible both within and outside the institution. Despite the efforts made by the university to acquire a repository, the usage of this avenue is yet to be realized.

1.4 Aim of the Study

The study assessed the role of the institutional repository as enabler of research output in academic institutions in Kenya with reference to KCA University.

1.4.1 Objectives of the Study are to:

1. Assess the level of awareness of institutional repository as an enabler of research output in academic institutions.
2. Investigate the usage of institutional repository by researchers in academic institutions.
3. Explore the role of the university management in adopting institutional repository in academic institutions.
4. Propose an appropriate model for embracing institutional repository as enabler of research output in academic institutions.

1.5 Research Questions

- i. What is the level of awareness of IR as an enabler of research output in academic institutions?
- ii. What is the current usage of institutional repository by researchers in academic institution?
- iii. How does the university management support adoption of institutional repository in academic institutions?
- iv. What is the appropriate model for embracing IR as enabler to research output in academic institutions?

1.6 Scope and Limitations of the Study

The study was based at KCA University, one of the private universities in the country. The aim of the study was to assess the role of institutional repositories as enabler of research output in academic institutions in Kenya. Data was collected from the fulltime academic staff, library staff and postgraduate students undertaking research at the University. The objectives of the study and the research questions formed basis of guiding the study. The outcome of the study was not generalized to all academic institutions because the study was contextualized to KCA University.

1.7 Significance of the Study

The result from this study will be used by academic institutions to embrace institutional repository as a platform to disseminate their research output. This is likely to increase the academic ranking of such institutions in the country and by extension globally.

The recommendations can be adopted by the management and key decision makers in order to encourage the promotion and utilization of institutional repositories.

Researchers will also benefit because their research output will be exposed making it visible for use. This will boost their reputation. Their publications will also be preserved on digital formats which free them from maintaining the content on a personal computer or website.

1.8 Operational Terms and Concepts

Academics

This includes employees in the universities at the level of assistant lectures, lecturers and the professors. Their core role at the university is to teach, perform research and publish their findings.

Academic Institutions

This is restricted to universities because of their dedication to research and education.

Digital Institutional Repository

This is the digital archive of the scholarly output generated by students, staff and academics of an institution and available to users within and outside the institution with minimal if any restrictions to access.

Open Access

This is application of internet to gain free access of information and knowledge through reading, downloading, search, print or link of articles, journals, thesis or publications. Open access has no technical, legal, financial or other barriers except how to gain access to the internet.

Research output

This includes all activities that entail use of knowledge and capability to research. These comprise conveyance of lecturers, presenting proposals, supervising research works of students and publishing the research.

1.9 Chapter Summary

This chapter has given a synopsis and background of the subject of institutional repository as enabler of research output in academic institutions. Subsequently, the problem of the study has been stated, along with the purpose and research objectives of the study. Finally, the scope, significance of the study and operational terms and concepts has also been discussed. The next chapter reviews literature pertinent to the research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provided an assessment of the literature linked to the purpose of study which is assessing institutional repositories as enabler of research output in academic institutions in Kenya with reference to KCA University. The chapter is organized into themes and sub-themes grounded on the study's objectives.

2.2 Digital Information in Academic Institutions

Development of information communication and technology solutions are quickly becoming important and essential components for transacting and performing business operations in organizations globally. Universities are currently embracing information communication and technology-based solutions to offer and provide improved quality services to clients and libraries are the power houses for knowledge, information and communication (Makori, 2016: 3). Customers are key in success of any business and the same applies to academia. Regular use of a product or service is a sign of a satisfied customer. Universities are aware of the economic potential of their research output and libraries being research centres are embracing institutional repositories to disseminate their research output (Jain & Kelvin, 2013: 1)

Intellectual communication and publication are progressively taking place due to the emergence of information communication and technology. The role of the librarian has also changed due to the new platform. The library has kept pace by re-shaping the storage and dissemination of information and knowledge through a variety of ICT based services to meet the needs of the users. This has led to the creation of institutional repository to enable access to digital form of scholarly output of an institution (Mandhirasalam & Srivivasaragavan, 2014: 1). They continued to define institutional repository as a platform through which academic institutions disseminate the digital resources generated by the university and its members. It's the mandate of the institutions to manage, disseminate and preserve the materials for long term. Institutional repository is a digital collection of intellectual output originating from staff and students and making it accessible by the users within and away from the organization.

Scholarly materials are gradually being generated in digital forms and most of the organizations involved in knowledge creation prefer the digital form as it has transformed the means through which knowledge is formed and distributed. Open access platform supports digital and online dissemination of research output which is unrestricted and free from copyright and authorization restrictions (Nyambi & Maynard, 2012: 55).

Institutional repositories are hence, important module of open access and offer an avenue that aids academic institutions and research organizations assemble research products, enable access and provide research outputs produced by an institution. In Africa, the highest centers of knowledge generation and intellectual communication are universities. But majority of African universities are lagging behind because of challenges that reduce their intellectual outputs and visibilities including rising numbers of students' enrolment, absence of research funding, meagre wages for faculty and researchers, lack of proper resources such as workshops, apparatus, journals and access to electronic databases and brain drain (Moseti & Mutula, 2016: 60).

2.3 Potential Benefits of Institutional Repository

Reasons for setting up an IR vary. Benefits range from the researcher, to the institution and to the individual discipline. Academic libraries have also benefitted from this initiative and there are impacts for the scholarly communication (Cullen & Chawner, 2009: 269). For the academics placing their work in IR gives their work exposure where it can be cited and reviewed by their peers for criticism. As a result, their reputation is boosted over the long term. Their work is also preserved in digital form where they cannot easily get damaged.

IR is a platform that operates as a transformation engine for any institution and has become a crucial means for sharing knowledge and information in the academic world. IR offers a way for collecting and preserving the electronic resources to enable future scholars to access and appreciate the theory behind published work (Mandhirasalam & Srinivasaragavan, 2014: 1). Bdelraham, (2017: 105), stress that an open access repository benefits both the university and the author. For the university, IR increases visibility and prestige, collate all the institutional output together including the unpublished ones. It also offers support for learning and teaching and the ability to retain track and analysis of research performance. Benefits for IR to researchers include enhancing dissemination and impacts of scholarship and access to a wider range of materials. Sangeeta (2015:

163) argues that, strategies to capture grey, traditional and institutional research output by initiating open access policy have enhanced visibility, reuse and generation of new knowledge among the academia.

Internet has revolutionized knowledge dissemination through open access (OA). Open access allows free, immediate access and availability of resources and research information. OA resources comprises of electronic books and journals, digital repositories and online public access catalogue (OPAC). OA has removed barriers to scholarly and scientific research by ensuring that resources and information are globally available and accessible. Accessories to OA resources includes: mobile phones, desk top computers, laptops and Ipads. The high application of modern technology in OA and knowledge dissemination facilitates remote virtual access to library resources by researchers. Therefore, institutional repositories are essential components for open access since they offer a platform that aids research institutes and universities collate research products and provide records of researches carried out by institutions (Nyambi & Maynard, 2012: 57)

IR is one way through which academic institutions can disseminate scholarly research. Ranking of highest institutions of learning is an acceptable practice founded on the need for humans to evaluate, compete and formulate criteria to determine standards. (Milimo, 2013: 17) arguments that research products should be accessible, available and relevant to impact the research platform. A way of boosting visibility and accessibility of research output is through IRs. Jain & Kelvin (2013: 2) opine that, wide circulation of research output adds value to published works. This has led to increased access as they can be accessed online. Universities are ranked in the academic arena due to their lecturer's research output and publication. This ranking process is enough evidence to conclude that research is indeed the universities key role.

Krishnamurty, (2008: 17) confirms that, IR have the capability of enhancing visibility of the scholarly communication. The author concludes by stating that, the interoperable nature of repositories enables cross-archiving, therefore, promoting open access to a lot of scholarly resources. Academic institutions enhance their prestige by disseminating their research work created by staff and students. This gives the institution a competitive edge because of their unique nature of the content in the repositories. This is of beneficial to the institution, as potential student interested in a discipline may be attracted to an institution that makes its research visible through

the repository. All universities desire to be ranked as the best compared to their counterparts in order to attract clients and boost their brand name and reputation (Chinamasa: 2014).

IR has become the most critical practice in libraries because it offers a platform for wide opportunities for researchers, teachers and students to access, analyze and use information to generate new theories and knowledge. Academic libraries are custodians of the scholarly communication and they focus on the generation of new knowledge through research, dissemination of findings to a journal in the related discipline, rigorous peer review to ensure the work meets quality standards of publication (Cullen & Chawner, 2009: 268).

Information and knowledge are the main drivers of economic development in any country. The Kenyan government has set aside funds for research and development and universities are amongst the beneficiaries. Researches are being carried out now and then, but the findings are shelved in the personal computers which after some time they cannot be accessed due to technological obsolescence. Due to development of institutional repository digital content of an institution can be exposed to a wider audience and this means that the work will be cited more, and the author's reputation will be increased. Other benefits of digitizing information are that access to information is guaranteed for a longer period, data in the repository cannot be altered or damaged for malicious use, and content can be accessed by many users at ago in different locations (Musangi & Sawe, 2013: 47). The Confederation of Open Access Repositories (COAR), defines an open access platform as a facility that offers unrestricted access to research content created within an institution or by a particular community of researchers with all barriers. Research output may be institutional-based or subject based collection (Bdelrahman, 2017: 104).

2.4 Level of Awareness of Users Towards Institutional Repositories

Reviewed literatures indicate that scholars have benefitted from this scholarly platform without their knowledge about this mode of communication. Studies carried out in Africa conform that academics are now gaining cognizant of IR and the role they play in supporting open access (Dulle: 2010: 5b) in his study of, "Researchers perspectives on open access scholarly communication in Tanzania public universities", indicates that 60% of the scholarly community were aware of the IR. However, similar studies in the USA by (Kim, 2010, Mischo & Schlembach, 2011) indicated that academics still stand unaware of IR in their institutions and self –archiving practices.

A similar study in Malaysia (Abrizah, 2012: 5) indicates that academic staffs do not know about self -archiving opportunities. Instead the faculties are using other repositories like subject based repositories since they are not aware about institutional repositories from their institutions. It is paramount for researchers to be aware of IR because of the benefits such as: increased visibility leading to more citations, free publications for authors, free access to research work online and boosting the reputation of the scholars.

It is evident that academic staff and research community do not value repositories as a publication process. Some researchers do not deposit their research output either because of lack of interest or knowledge of the benefits of IR (Cullen, 2009: 268). Librarians need to do more marketing and educate the scholarly community of the benefits for this new platform to be successful. Researchers use various platforms to publish their research output. They include use of print books and journals, research project and theses, reports and conference papers. The traditional means led to restricted access since the outputs were managed in libraries in the particular institutions under monitored access and only accessible to the respective community only (Ezema, 2011: 324).

2.5 Usage of Institutional Repositories

Access and dissemination of research work in Kenyan academic institutions like in other developing countries is encountered by some issues. Researchers produce a lot of scholarly research output, but this work is accessed by accredited members only and the academic fraternity. Therefore, locking other potential users from access (Ezema, 2013: 34). If these findings are not shared publicly it is then a waste of resources (Lwoga & Questier, 2014: 117). This calls for an effective tool for knowledge dissemination such as the IR.

The more broadly scientific discoveries are circulated, the more likely are they understood, used and relied upon for future understandings and innovations. The practice of scholarly research is necessary for the growth of scientific research. Hence, implying that undertaking research without sharing its findings is a waste of resources and time (Lwoga & Questier, 2014: 117).

In India, Dhanavandan & Tamishcheivan, (2013), studied on the, “awareness of institutional repository and open access publishing among faculty members in Annamai University”. Study revealed that awareness of open- access and repository archiving was low but there was very high level of support for the concept of open access and the benefits of increased exposure and potential

for sharing outweighed the perceived risk. A number of studies carried out in the developed world indicate minimal usage of IR as a tool for disseminating the scholarly communication (Abrizah, 2012). Lack of awareness may result to the scholars using other methods of disseminating their work such as personal web pages. The altitude of users towards the institutional repository will affect its use. A consumer will only contemplate a system useful if they can easily operate. Supposed effectiveness of a system is well-defined how a person trusts a new expertise would aid him to improve his enactment in a given task. Embracing the institutional repository will boost the research output. (Dulle, 2010a: 14).

Librarians for a long time have been dared to successfully promote intellectual communication ideas to the academics particularly when issues touching on quality and publishing infringements are raised (Laughtin-Dunker, 2014:1164). Laughton continues to argue that, faculty are always hesitant to adopt open access because of the prevailing university incentive system and misconceptions with regard to quality. Faculty staffs are always attracted to publish in prestigious journals that hold a status of quality so as to earn better terms and promotions. Open access resources such as journals are thus not embraced because they are yet to earn a prestigious status and are often overlooked by faculty who prefer to publish through the already established journals to disseminate their work.

IR supports teaching and collaboration through archiving of institutions scholarly activities. Research output are collated at one stop where they can be accessed much easier. This enhances quality of teaching and scholarship as researchers have access to the right information (Nagra, 2012: 139). These platforms support knowledge sharing and collaboration with other institutions. Academic libraries also benefit for being involved in setting up the repositories and there are positive impacts in scholarly communication such as: enhancement of open access, collaboration with other institutions therefore being relevant to the changing needs of the researchers.

Universities and academic institutions are taken to be centers of knowledge generation where concrete solutions to the society challenges are developed through knowledge management and research innovations. Management of universities is shifting from scholarly based institutions to stakeholder's organizations. Universities are partnering with external stakeholders in other sectors of the economy to create knowledge and innovations through jointly funded research (Lehmann,

2015). With the partnerships, knowledge dissemination becomes a critical process of improving quality research output and transformation of academic works in stakeholder's enterprises.

Access to institutional output is improving because of institutional repository and access to information communication and technology. Growing numbers of institutions of higher learning are supporting students to surrender their thesis in electronic formats. Institutions are then digitizing these theses to make them visible on the internet.

2.6 Support from University Management

The open access platform has opened new ways of disseminating scholarly work. Before the existence of institutional repository, researchers used to send their manuscript to the publishers where in most cases if accepted were published in books. For those who could not afford the publishers fee their work was stored in computer drives which was not easy to trace after some time (Musangi & Sawe, 2013: 4). Embracing IR has offered a solution to this menace. Institutional repository can now disseminate unpublished works (grey literature). Librarians play a key role in maintaining the repository. The management role is to avail adequate funds to acquire the state-of-the-art equipment that will ensure the smooth running of the repositories (Musangi & Sawe, 2013). The management should also ensure that, the personnel hired for the job have the necessary skills to run the repositories.

Success of IR has been believed to depend on the support of management. Senior managers backing, and commitment are vital in preparation, development, application and embracing ventures. Senior managers provide sufficient and appropriate resources. Senior managers also promote encouraging attitudes amongst other managers and clients in regard to the use of IR (Nabe, 2010: 13). This ensures sustainability of institutional repository as observed by Makori, Njiraine & Talam, 2015). Lack of management commitment could lead to deliberate resistance by other executives and users.

This new avenue for scholarly communication supports open access policies which allow works to be copied and distributed freely, therefore being faced with copyright and licensing issues. Management has to come up with policies that require every faculty member to submit their work to the repository. The author should confirm on the policies of the publisher's policy before they

can submit their work to the repository. Copyrights give the owner certain exclusive rights to the use of the information (Nath, Joshi & Kumar 2008: 50).

2.7 Conceptual Framework

According to (Lohr, 2010: 2), conceptual framework is the reason why the subject one desires to study is important as well as the suggested ways to study it are acceptable and adequate. Through the conceptual framework, the study identified and demonstrated the various variables that influence the adoption of institutional repository as illustrated in figure 1. Independent variables such as: minimal publicity, poor management support, lack of interest from scholars to deposit, negative user perception and lack of financial benefit led to minimal use of institutional repository as an avenue for research output and as a result there was poor adoption of institutional repositories as research enablers.

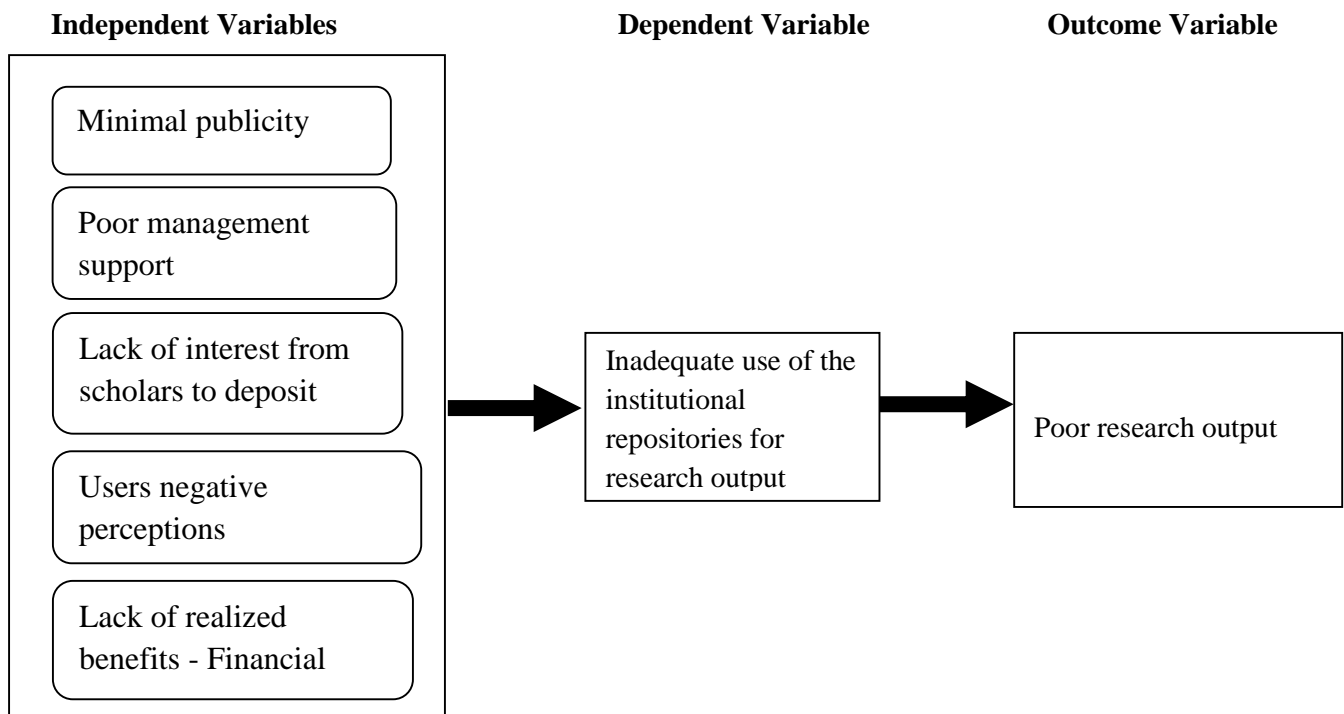


Figure 1: Conceptual framework for Institutional Repository (Researcher, 2017)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section will discuss the research design and methods that were used by the researcher to collect data for the study. Further, aspects which include research design, population size, data collection instrument, data collection procedure, pilot test, validity and reliability of the instruments, and data analysis as well as ethical consideration will also be discussed.

3.2 Research Design

Research design involves preparation of conditions aimed at data collection and data analysis in order to combine relevance to the research purpose (Leedy & Ormrod, 2010: 25). According to Msweli (2011: 5) research design considers the questions, objectives and aims that are already outlined in the problem of research. It gives a plan to deal with questions of the research by pointing out all sources in which data ought to be collected. The three mostly common research methods include: quantitative, qualitative and mixed methods. This study employed both quantitative and qualitative method to assess the role of institutional repositories as enabler of research output in academic institutions in Kenya with special reference to KCA University. Interview guides and questionnaires were the main data collection methods used for the study. The aim of combining the two approaches namely; qualitative and quantitative method for the study was because a complete picture would not have been generated by using only one method.

Qualitative approach involves studying issues in depth and in detail without the constraints of having pre-determined categories. This encourages openness and depth in data. Qualitative study is mostly inductive and less standardized. Researchers may not recognize the results of the data during the stage of analysis because they cannot foresee the reactions of the participants. Hence, it is not possible to pre-determine the answer for the participants to choose from (Neuman, 2006: 499). Qualitative approach executed through the interviews conducted on the senior library managers was effective and enabled the researcher to explore and understand the role the managers' play in adoption of the institutional repository in the institution. The objective was to establish the in-depth views of the role the university management is playing in supporting the establishment of the institutional repository.

Quantitative method is involved with questioning a big number of people similar questions and recording their answers. The remarks gathered from the responses are finally represented in numbers. Quantitative research commences with an exact plan which includes a set of comprehensive hypothesis or questions. The researcher then continues to gather facts from a certain sample by establishing the reasons behind people's behavior. (Roberts, 2010: 145). Msweli (2011: 64), opines that quantitative data may be gathered by the use of research tools like questionnaires. For this study questionnaires (both open and closed ended questionnaires) were used to analyze the quantitative data on establishing the level of awareness of the institutional repository as enabler of RO in academic institutions and investigating the usage of IR by researchers in academic institutions. Quantitative method of research allows usage of consistent measures to enable variable views and knowledge of people to fit to a limited amount of determined answers to some categories which are assigned numbers. These aspects are significant in collection of data from the sample of fulltime academic staff, library staff and postgraduate students. The questionnaire consisted of predetermined queries in a homogenous set-up that supplied data that was easily measured. Questions framed targeted the objectives of the study in order to gather both qualitative and quantitative feedback for the same stage of the study. Quantitative part contained of close-ended questions that targeted fulltime academic staff, library staff and postgraduate students. The questionnaire also contained some open-ended queries in which the participants were permitted to make available some comments regarding the numerous aspects of IR evaluation.

3.3 Area of the Study

The study was carried out at KCA University main campus at Ruaraka where the main library is located, and the repository is hosted. The study covered the fulltime academic staff, senior library managers, library staff and postgraduate students who regularly interact with the institutional repository.

3.4 Target Population

According to Johnson & Christensen, (2011: 4), a target population is a large group from which a small proportion is selected and out of which accurate information can be gathered. Target population of this study consisted of 170 participants. Population of study involved 88 fulltime academic staff, 14 library staff and 62 postgraduate students undertaking Master of Science in

Commerce, from the data provided by the Human Resources Department and Registrar's Office. The study also involved 6 senior library managers for the interview. Senior managers were involved since they are the decision makers. The whole group formed the target population.

3.5 Sampling Techniques and Sample Size

Sampling is a technique that uses a few amounts of characters of a certain population in order to draw assumptions with respect to the entire population (Kothari, 2004: 147). Sampling is done to save on time and cost aspects.

3.5.1 Sampling Techniques

The study adopted census and purposive sampling techniques. Cluster sampling was used to select all the postgraduate students undertaking Master of Science in Commerce admitted during May-September 2017 intake because that was the period when the researcher was carrying out the study. Census method was used to select all the fulltime academic staff since the target population was small and selecting a sample would be meaningless. Library staffs together with senior library managers were selected through purposive method of sampling because they were deemed to have the necessary information about the institutional repository.

3.5.2 Sample Size

A Sample size consist the number of characters used to represent the total population (Cooper & Schindler, 2011: 139). Being a case study that involved a smaller sample of respondent, the study used the total population consisting of all the 88 fulltime academic staff and 62 postgraduate students. 14 library staffs and 6 senior library managers were purposively selected since they were perceived to be knowledgeable about the institutional repositories based on their many years of experience. Senior library managers are also policy makers who are accountable to the implementation of innumerable policies at the university such as allocation of funds for IR. Therefore, population size was equal to the sample size.

The list of respondents was from the data provided by Human Resource Department and Registrar's Office. Mugenda and Mugenda (2003: 4), confirms, that the target population is sometimes very small making it pointless to sample. Leed & Ormond, (2010: 33) in addition, opines that, for populations that are small, N (sample size) = 100 or less, there is no need to sample, study the whole population. Purposive sampling is a selection of samples based on one's

knowledge of the population and the objectives of the research. Lynn & Ronald (2010:43). Purposive sampling is a method of non-probability sample which involves certain criteria. Neuman (2006:143), claims that, purposive method of sampling is used to pick out elements which are specifically enlightened. Therefore, the study comprised a sample scope of 170 respondents.

Table 1: Sample Size for Respondents

RESPONDENTS	POPULATION SIZE	SAMPLE SIZE
Fulltime academic staff	88	88
Postgraduate students	62	62
Library staff	14	14
Senior library staff	06	06
Total	170	170

Source: Researcher (2017)

3.6 Data Collection Methods

Data collection is a method of collecting information to aid in verifying certain facts. Kombo & Tromp (2006:213) points out several aspects that guide in choosing a research method. They include the clearness of purposes of the study, the features of the population sample such as geographical coverage, educational level and the type of the questions to be requested. For this study questionnaires and interview guides were used to collect data. The researcher used a research assistant to distribute self-administered questionnaires which were later collected within the stipulated period and interview schedule was carried out to one of the senior librarian who was present at the moment.

3.6.1 Questionnaire

The core instruments for gathering data for the study were questionnaires and interview guides. A questionnaire is a designed instrument for collecting data directly from the people, Johnson & Christensen (2011:37). A questionnaire is a useful tool for quantitative data since it provides responses that can be calculated and tabulated.

A questionnaire can either be structured or unstructured. Structured questionnaires request participants to pick answers from the list of choices provided while unstructured questions respondents use of their own words to express their responses (Bhattacharjee, 2012: 74). As observed by Mavodza (2010: 112), the format used for the questionnaire may have some effects on the accurateness of answers. Since no one is available to clarify on the questions asked to the participants, the questions asked should therefore be straight forward and easy to interpret. The questionnaire ought to be in a way that is simple to read, comprehend and simply follow the order as noted by Kumar (2005: 126).

Data collection for the study was done through self-administering questionnaires. Questionnaires were formulated grounded on the study purposes and research hypothesis, hence, enabling the researcher to meet the study objectives. Questionnaires were administered by the research assistant to the respondents selected as a sample population and they were collected at a later date. Data was collected within the stipulated period of time. The questionnaire was divided into two main sections. Part I sought to find general information and part II was subdivided into 4 sections with questions formulated from the research questions. This section sought to provide data on the level of awareness of IR, use of institutional repository, support from management and the challenges hindering the adoption of IR. The study adopted a Likert scale where, 5 stood for Strongly Agree, 4 for Agree, 3 for Neutral, 2 for Disagree, 1 for Strongly Disagree. The questionnaire composed of open and closed ended questions. The questionnaires were distributed to the library staff, fulltime academic staff and postgraduate students. The questionnaire was carefully formulated with the essential background information and introduction.

Questionnaires are well documented in literature. They are preferred because they allow privacy and the respondents can give honest opinions than they would in an interview especially on controversial issues. Compared to other data collection methods, questionnaires are inexpensive and allow many respondents to be surveyed in a short period of time regardless of their geographical location. However, its limitation is that it can only be used to those who can read and write (Kumar, 2005: 130).

3.6.2 Interview Guides

Bhattacharjee (2012:78), states interview to be a tailored approach to a personalized way of collecting data. A trained interviewer conducts an interview using the similar consistent set of

questions as a questionnaire survey. Kumar, (2005) points out that, the interviewer come face to face with the respondents then ask them the pertinent questions concerning the objectives of inquiry.

The face -to-face interview was conducted to the one senior library manager who was available at the moment with an aim to corroborate data gathered through questionnaires. Senior library managers were selected since they are the most suitable source of rich valuable knowledge on the role the university management is playing in supporting institutional repository in the university.

3.7 Research Instruments

Research instruments are measurement tools which include surveys, interview guide, observation and questionnaire. The study used self-administered questionnaires and interview schedules. This mixing of data is called triangulation. Triangulation involves use of a mixed approach of data collection (Yeasmin & Rahman 2012: 155). Several methods increase confidence on data collected. Therefore, one method of conducting research methods should be discouraged because one method may not bring out the desired result because of some demerits associated with the method.

3.7.1 Pilot Study

A pilot study is a kind of testing that can reveal unanticipated problems such as question wording, difficult in interpreting the questions among other errors. It can prove helpful if respondents know what the question asks in the similar way that the researcher knows them. A pilot study showed how long it would take to complete the questionnaire, edit the questionnaire in a way that the questions would generate reliable data. A pilot study was carried out to assess the validity and reliability of the questionnaire. A pilot study was carried out at United States International University- Africa (USIU), along Thika road. Errors detected after pre-testing the questionnaire were adjusted accordingly. USIU-Africa was chosen because it is also a private university in Kenya and the study was likely to yield the same results. The proximity of the two universities made it easier for the researcher to carry out the pilot study.

3.7.2 Validity

Validity refers to the degree in which the investigator gathers data that replicates the accurate representation of the phenomenon under investigations (Kasalu & Ojiambo, 2012: 26). The study

focused on the content validity to the extent that data collected reflected similar concepts during the pilot study. When not achieved questionnaire was adjusted accordingly. Validity for the study was obtained through giving questionnaire to few groups of people who were not part of the study. Validity of the study was also established using different methods.

3.7.3 Reliability

Reliability refers to the degree in which a method produces reliable data or results after repetitive trials (Kasalu & Ojiambo, 2012: 28). When checking consistency, the scholar is concerned about establishing whether a selected apparatus will bring uniformity in the study. The researcher should get alike outcomes each time it is assessed. To attain maximum reliability and validity, the researcher utilized together quantitative and qualitative methods. The researcher ensured that the order of queries was clear, and the aims were adequately covered by the questionnaire. A pilot study was also necessary to guarantee reliability and confirm consistency of results. The researcher conducted a test-retest procedure by giving the questionnaire two times to confirm reliability and comparing the results from the two testing phases. Any weaknesses, inadequacies and ambiguities that was revealed was adjusted accordingly. In addition, the researcher made notes to ensure accuracy of the data collected during the interview. If another researcher undertook the same study under similar conditions, they would reveal the same findings. Using both questionnaires and face- to- face interviews guaranteed that benefits from both methods were realized and a high rate of validity and reliability of the data was certain.

3.8 Data Collection Procedures

Data collection involves assembling explicit data to be used to verify or refute some evidences (Orodho, 2005: 47). Pre-testing of the instrument was carried out to ensure that the items in the instruments had the same meaning to all the respondents. Pre-testing also allowed refinement before the final test. Pretesting is the confirmed means of determining if the questionnaire causes difficulties to the respondents Babonea & Voicu (2011: 8). Therefore, pretesting is an important process. Pretesting the questionnaire and interview guide was carried out to four participants from the four categories of the respondents. Johnson & Christensen (2011: 38) opines respondents to be involved in pretesting can vary from two to ten participants and should reflect the real population of participants to be used in the genuine study.

3.9 Data Analysis

Data analysis is the procedure of assessing data by means of logical and analytical reasoning to observe each element of the provided data. Analysis data involves coding, editing and tabulation. It also involves grouping data into thematic areas and analyzing content. Data that was gathered from the field was analyzed into meaningful relevant information. Quantitative method was used to collect data that addressed the following aspects: level of awareness towards IR and investigating the usage of IR. The coded data was analyzed using statistical measures including percentages and statistics while the respondent content was put in prose form. The results were presented using frequency tables, charts and graphs for better interpretation. Qualitative technique was used to bring together data obtained from the objective that addressed the kind of management support towards adoption of institutional repository in academic institution. Qualitative data collected was analyzed using content data analysis technique. Data was collected from the interview conducted on the senior library manager. Content data analysis was appropriate because it allowed the researcher to make detailed observations and description of the qualitative interview answers and make appropriate inferences towards meeting the objectives of the study. Content analysis involves analyzing the contents of documentary materials both written and verbal and identifying specific features that could be recognized and accounted (Kothari, 2004: 110). In conclusion, qualitative data that was generated as a result of the interview conducted was evaluated manually through content examination by means of assessing the notes recorded by the researcher from the senior library manager, while the quantitative data from the questionnaire was analyzed by Statistical Package for Social Sciences (SPSS). The qualitative approach addressed the “how” and “why” aspects while the quantitative method took care of the “what”, “how many”, “where” and “how much” aspects of the research study.

3.10 Ethical Considerations

The ethical consideration for the study was the privacy of the respondents. Bhattacharjee (2012: 137) explains ethics in research as the difference between right and wrong and that it does not always imply what is unethical is illegal. Ethics restrict researchers from posing questions that would cause embarrassment, duress or infringe on the respondents’ private life. To ensure results of the findings were not affected, respondents were guaranteed any information they supplied was for the purposes of research only and would be treated with confidentiality. Authority of the party

involved was also sought before the study was carried out. Ethical considerations involve; protection from any form of damage, confidentiality, secrecy and privacy, informed consent, unpaid participation and how the researcher should conduct himself during the research process (Babbie, 2010: 5). The researcher sought consent from the respondents before carrying out the study. Dewah (2012:155) argues it is responsibility and duty of the researcher to disclose all the essential information to the respondents about the reasons for carrying out the research. A letter was attached to the questionnaire pointing out the purposes of the study before the respondent finished filling the questionnaire. Cited sources were properly referenced both in-text and at the end of the study by use of APA style of referencing. This eliminated any forms of plagiarism being a serious academic offence. Through referencing opinions of the author were detached from the views of the researcher.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

The chapter presents, interprets and debates findings of the study. Findings were attained by the use data collection methods discussed in chapter three. Data was collected from questionnaires and interview with one senior library manager. The evaluated data was communicated in form of charts, tables and graphs.

Data analysis is a process that involves interpretation of raw data to ensure that results held in the data are clear. Kombo & Tromp (2006: 110), Data analysis is a challenging and captivating process demanding clear uninterrupted time. The process requires comparing different forms of evidence, interpretation, thinking and reviewing. The researcher puts into account diverse views of evidence on similar themes in the research.

4.2 Response Rate

A total of 170 questionnaires were distributed out of which 154 questionnaires were returned representing 90% response rate. The response rate was 7.8% library staff, 54.5% fulltime academic staff and 37.7% were postgraduate students. According to Mugenda & Mugenda (2003:12) a response rate of 70% and above is very good. The high response rate therefore, provided reliable data for the study. Results are summarized on the Table 2 pg. 25 below. In addition, interview was conducted on the 2 senior library managers.

Table 2: Response Rate

RESPONDENTS	DISTRIBUTED	RETURNED	PERCENT
Library Staff	14	12	7.8
Full time Academic staff	88	84	54.5
Postgraduate Students	68	58	37.7
TOTAL	170	154	100

4.3 Background Information of the Respondents

The general information of interest to the researcher included professional expertise, gender of the respondents, highest level of education and their age. The findings indicated that librarian represented 7.8% of the respondents, lecturer 54.5% and student 37.7%. The results are summarized in Table 3 pg. 26. These outcomes imply that, academic staff were the majority since they are mostly engaged in research activities.

Table 3: Professional Expertise

VARIABLES	FREQUENCY	PERCENT
Library Staff	12	7.8
Fulltime Academic Staff	84	54.5
Postgraduate Students	58	37.7
TOTAL	154	100

The distribution of respondents by gender was also necessary to determine the gender balance. The question aided in getting a balanced view from both males and females. Results revealed that 42.9% respondents were male while 57.1% were female. Findings indicate that female respondents were the majority. A clear indication that women are also not being left behind in matters of academics. Studying both male and female respondents and conveying their opinions can be taken as a balanced study where all are represented. This implies that the results were reliable as a true state of the study because both genders were well represented and there was no biasness. The outcomes are depicted in Table 4 pg. 26.

Table 4: Gender of the Respondents

GENDER	FREQUENCY	PERCENT
Male	66	42.9
Female	88	57.1
Total	154	100

In terms of highest educational level, 3.2% of the respondents were diploma holders, undergraduate and postgraduate had equal number of respondents, 44.8% and the remaining 7.8% were PhD holders. This indicates that undergraduate and postgraduate respondents were the majority while the least were diploma holders. The results further imply that all the respondents were academically qualified and were familiar with the institutional repository since they were engaged in research activities. This ensured the study got valuable data about adoption of institutional repository. Conclusions are captured in Table 5 pg. 27 below.

Table 5: Highest Level of Education

RESPONDENTS	FREQUENCY	PERCENT (%)
Diploma	5	3.2
Undergraduate	69	44.8
Post Graduate	69	44.8
PhD	11	7.1
TOTAL	154	100

The study also pursued to discover out the age distribution of the participants in order to establish the age dominance at the institution. Results indicated that the highest number of the respondents 42.9%, were aged between 31-40 years. Followed by those between 26 and 30 years who formed 23.4%. This appears to be the age when most clients are involved in research activities. 18.8% between ages 41-50 years, and 9.1% were between 51-60 years while those above 60 years were the minority group and they formed 5.8% of the total response. Results indicated that respondents were well represented in terms of age and hence could contribute constructively to the study. Results are shown in Table 6 pg., 28. As a result from the findings most of the respondents were between the ages of 31-40 years, followed by those between 26-30 years old. Whereas those beyond 60 years were the minority. This is an indication that the younger generation is more likely to be attracted to the digital platform unlike the older generation because they have the skills and experience in terms of internet usage.

Table 6: Age Distribution

RESPONDENTS	FREQUENCY	PERCENT (%)
26-30 years	36	23.4
31-40 years	66	42.9
41-50 years	29	18.8
51-60 years	14	9.1
Above 60 years	9	5.8
TOTAL	154	100

The study also sought to confirm how the respondents learnt about the availability of the institutional repository at the university. Results indicated the most 27.3% of the total respondents learnt about the institutional repository through library orientation, followed closely by those who learnt about it through social media platform such as Facebook and twitter forming 24.0% of the total respondents, 20.1% through library website, 19.5% heard about it from colleagues, 6.5% brochures and the minority 2.6% through seminars organized by the librarians. It is evident that library orientation, social media platforms and library website are the main means through which the respondents got to know about existence of the institutional repository. Majority of the respondents choosing library orientation is a clear confirmation that librarians play a vital role in marketing and promoting the institutional repository in the institution. Librarians therefore, can apply different approaches to populate the scholarly platform. Table 6 pg., 29 below presents a summary of the findings.

Table 7: How did you learn about the availability of institutional repository at the university

VARIABLES	FREQUENCY	PERCENT (%)
Library orientation	42	27.3
Library website	31	20.1
Brochures	10	6.5
Social media platform such as Facebook and Twitter	37	24.0
Seminars and workshops organized by the library	4	2.6
From colleague	30	19.5
Total	154	100.0

4.4 Level of Awareness Towards Institutional Repository

The study sought to ascertain whether the participants were aware about institutional repository. To achieve this objective several questions were raised such as: whether they were aware that IR was effective in managing the research output, relevant and beneficial to the institution and whether it offers solutions in terms of access and use of research output. Findings as explained in table 8 pg. 30 below revealed that, a majority of the participants 40.3% strongly agreed that institutional repository was effective in managing the research output, 36.4% agreed, 12.3% were neutral, 5.8% disagreed and 5.2% strongly disagreed. In terms of whether institutional repository was relevant and beneficial to the institution. Results showed that majority 64.9% strongly agreed, 27.3% agreed, 4.5% were neutral, 1.9% disagreed and the minority 1.3% strongly disagreed. Whether institutional repository offers solutions in terms of access and use of research output. Findings revealed 40.9% strongly agreed, 39.6% agreed, 12.3% were neutral, 5.8% disagreed while the least 1.3% strongly disagreed. This showed that institutional repository was effective in managing research output, was relevant and beneficial and would offer solutions in terms of access and use of research output. These outcomes revealed that most respondents seemed to have been aware about the existence of IR in the institution and its uses. Adoption of institutional repository by the respondents as a means of disseminating their scholarly communication depends on their awareness. These findings concurred with the studies of Dulle (2010: 5a), Lwoga & Questier (2014: 127). Dulle in his study of, “An Analysis of open Access Scholarly Communication in Tanzania Public Universities”, majority (71.2%) of the contributors to the study were aware of

open access and as a result there was increased use of the open access platform. There is therefore need to create more awareness in order to increase the usage of the platform.

Table 8: Level of Awareness Towards Institutional Repository

Statement	Respondents number & percentage				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Effective in managing the research output	5.2	5.8	12.3	36.4	40.3
Relevant and beneficial to the institution	1.3	1.9	4.5	27.3	64.9
Offers solutions in terms of access and use of research output	1.3	5.8	12.3	39.6	40.9

4.6 Assessing the usage of the Institutional Repositories

The study assessed the usage of the institutional repositories in terms of enhancing visibility of the institution, providing a platform for scholarly output, promoting quality of teaching and collaboration, accessibility of resources in other locations apart from the library, promoting open archiving and increasing visibility and prestige of researchers.

Findings showed a majority 54.4% of the respondents strongly agreed and were positive that institutional repository enhances visibility of the institution, 37.0% agreed, 6.5% were neutral while 1.9% disagreed. Whether the repository provides a platform for scholarly output, findings were as follows: majority 40.9% strongly agreed, 37.7% agreed, 11.7% neutral, those who disagreed were 5.8% while 3.9 % seemed to strongly disagree. In terms of whether the repository promote quality of teaching and collaboration, findings revealed that majority 55.2% strongly agreed, followed by agreed 34.4%, 6.5% were undecided, 3.2% disagreed and the least 0.6% strongly disagreed. Whether the repository allowed accessibility of resources in other locations apart from the library, findings indicated 44.8% strongly agreed, followed by those who agreed 39.6%, neutral 7.8%, 5.2% disagreed while 2.6% strongly disagreed. In terms of whether institutional repository promotes open archiving, majority of the respondents 49.4% strongly agreed, 40.3% agreed, neutral and disagree had equal number of respondents who represented 4.5% of the total respondents and the rest 1.3% strongly disagreed.

The study further sought to establish whether institutional repository increases visibility and prestige of researchers. Findings showed that majority 36.4% strongly agreed, followed by 30.5% who agreed, 17.5% were neutral, 11.0% disagreed while 4.5% strongly disagreed. The results obtained showed that institutional repository enhances visibility of the institution, provides a platform for scholarly research, enables accessibility of resources in other locations apart from the library, promotes open archiving and increases visibility and prestige of the researchers. Respondents' awareness of the benefits of open access to disseminate research output is important in supporting its adoption. These results findings were supported by previous studies such as Krishnamurthy (2008: 187) concurred that IR have potential benefits to the institutions such as: increased status and public value, enhanced visibility and better management for personal research. Suber, (2010) holds the same view that through open access researchers have a wider visibility, diverse audience and increased citations of their research output. Table 9 on pg. 31 presents the results. These findings demonstrate that IR is used for various reasons and as a digital platform if utilized effectively, one can easily connect with the global community.

Table 9: Usage the Institutional Repositories

Statements	Respondents number & percentage				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Enhances visibility of the institution		1.9	6.5	37	54.5
Provides a platform for scholarly output	3.9	5.8	11.7	37.7	40.9
Promote quality of teaching and collaboration	0.6	3.2	6.5	34.4	55.2
Accessibility of resources in other locations apart from the library	2.6	5.2	7.8	39.6	44.8
Promotes open archiving	1.3	4.5	4.5	40.3	49.4
Increase visibility and prestige of researchers	4.5	11	17.5	30.5	36.4

4.7 Support of the Institutional Repository by Management

The study sought to find out whether the management offers any support towards the establishment of the institutional repository in terms of providing enough computers, scanners for digitization, leadership in the setting up of the repository, training and workshops about the use of the institutional repository, allocation of enough funds and have strategies in place for promoting and

marketing institutional repository. Findings indicate that majority 59.1% strongly agreed that management has provided enough computers, followed by 39.6% agreed, those who were neutral were 7.8%, 5.2% of the total respondents disagreed while 2.6% strongly disagreed. Whether the management has provided the required software for hosting the repository. Findings revealed that 59.7% strongly agreed who formed the majority, followed by 29.9% agreed, 5.8% were neutral, 2.6% disagreed and 1.9% strongly disagreed. The study further established whether the management has provided scanners for digitization. Results indicated majority 28.6% were neutral, 27.9% disagreed, 26.6% strongly disagreed, 11.0% agreed while the rest 5.8% strongly agreed. Based on the responses it is an indication that the management has not provided any scanners for digitization. Whether management has provided leadership in the setting up of the repository. Findings showed that majority 42.9% strongly agreed, 44.2% agreed, 11.0% were neutral and finally 1.9% disagreed. Respondents were further asked if management provides training and workshops about the use of the repository. Findings established that majority 41.6% strongly disagreed, 18.8% were neutral, 17.5% disagreed, 14.9% disagreed while 7.1% strongly agreed.

In terms of whether management provides enough funds for repository. Findings indicated that 56.5% agreed, 32.5% of the respondents were neutral, those who strongly agreed and disagreed had equal number of respondents 5.2% and 0.6% strongly disagreed. Whether the management have strategies in place for promoting and marketing institutional repository, findings indicated that slightly above half 51.3% were neutral, 33.8% agreed, 11.7% strongly agreed while 3.2% disagreed. Findings revealed that majority were for the opinion that management has provided: enough computers, the required software for hosting the repository, leadership in setting up of the repository and enough funds for running the repository. However, management has not put up strategies for promoting and marketing institutional repository neither has it provided scanners for digitization as well as offering trainings and workshops about the use of institutional repository. Jain & Kelvin (2013: 8) opines that, management role involves formulating policies guiding on the management of IR and introducing other policies to ensure mandatory submission of the research output. Similarly, Makori, Njiraine & Talam (2015: 15) assert that, senior management must ensure timely and adequate constant supply of resources. The findings are summarized in Table 10 pg. 33 below. This implies that, management has to provide the necessary infrastructure

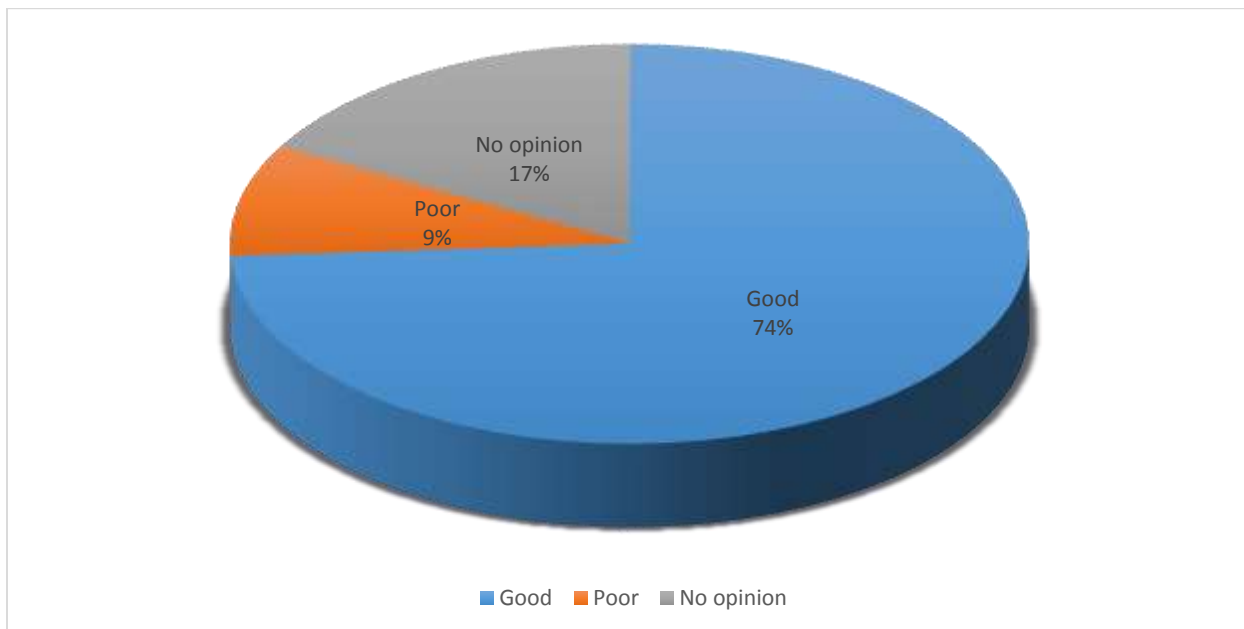
such as quality software to host the repository, adequate funds and use various mechanisms to populate the platform.

Table 10: Support of the Institutional Repository by Management

Statements	Respondents number & percentage				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Provides enough computers	0.6	3.2	6.5	30.5	59.1
Provides the required software for hosting the repository	1.9	2.6	5.8	29.9	59.7
Provides scanners for digitization	26.6	27.9	28.6	11	5.8
Provides leadership in the setting up of the repository		1.9	11	44.2	42.9
Provides training and workshops about the use of institutional repository	41.6	14.9	18.8	17.5	7.1
Provides enough funds for the repository	0.6	5.2	32.5	56.5	5.2
Have strategies in place for promoting and marketing institutional repository		3.2	51.3	33.8	11.7

Respondents were also requested to rate the level of support of the institutional repository given by the university management. Findings indicated majority 74.0% rated the support given by university management as good, 16.9% had no opinion while 9.1% rated poor support by the university management. This implies that the support given by the university management is good. Makori, Njiraine & Talam (2015: 15) concurs that, management support and commitment are vital in implementation and adoption of institutional repositories. Senior administrators impact positively to other administrators and other users with respect to usage of institutional repository. As a result, there will be effective exploitation of this mode of scholarly communication in terms of content deposit and other uses because members will be confident about the platform. Results are presented in Figure 2 pg. 34 below.

Figure 2: Rate of Support by University Management



In addition, the interviewee had a question to the manager on the management support towards the adoption of the repository. One of the managers who was available had this to say, " *Success of IR requires necessary ICT infrastructure. This includes the right software, uninterrupted power supply and dependable internet. Library management has provided adequate computers and reliable internet connectivity for accessing the repository. Majority of the students visit the library E-Centre for access. However, there are no enough computers to adequately serve the entire population especially with the increased number of students who are government sponsored. There is need for more computers to be purchased and since there is wireless connectivity with several hotspots within the university users should be encouraged to use their laptops for accessing the repository*". Further, interview was conducted to the senior library management regarding the strategies they have put in place for marketing and promoting the institutional repository. The manager stated that, " *Currently the only means for marketing and promoting the repository is through library orientation and social media such as Facebook and Twitter, library website and brochures. There is need for vigorous campaigns and different approaches to be used in order to market the platform. Librarians' role is to create awareness and emphasize the benefits of using the repository. These can either be through current awareness or selective dissemination of information. They can organize more seminars and workshops to market and promote the repository. Other mechanisms can be through information literacy classes and use of emails where*

updates about the repository will be communicated. Specific days can also be set aside when demonstrations will be carried out and researchers taken through on issues such as self-archiving.” “In conclusion, it is the role of librarians to do follow up with the academic staff who have recently completed their work to be uploaded in the repository.”

4.8 Challenges that Hinder Adoption of Institutional Repository

The study deemed it necessary to find out the challenges that hinder the adoption of institutional repository. Responses were based on lack of skills to use the institutional repository, lack of awareness of IR, legal and copyright issues, perception of IR contents being of lower quality, inadequate funding and poor ICT infrastructure. Findings indicated that, in terms of lack of skills as a hindrance to the use the institutional repository, majority 47.3% strongly agreed, 45.7% agreed, 3.9% were undecided while 2.6% disagreed and 0.6% strongly disagreed. For lack of awareness of IR. Results indicated that an overwhelming majority of respondents 57.1% seemed to agree, they were followed by 35.7% strongly agreeing, 3.2% disagreed, 2.6% represented the percentage that was undecided and the rest 1.3% strongly disagreed. In terms of legal and copyright issues responses were as follows: 54.5% strongly agreed, 40.3% agreed, 4.5% disagreed and 0.6% were undecided. Further, the study sought to find out whether perception of IR contents as being of lower quality hindered the adoption of IR. Results revealed that, 41.6% agreed, 37.0% strongly disagreed, 19.5% were undecided, 1.3% disagreed while strongly disagreed reported 0.6%. In terms of whether inadequate funding hindered the adoption of institutional repository, responses elicited that majority 42.9% agreed while 40.9% strongly agreed, 7.8% represented those who disagreed, 7.1% were undecided and the rest 1.3% strongly disagreed. It was also necessary to establish whether poor ICT infrastructure is a hindrance to the adoption of IR. Results indicated that 48.7% strongly agreed, 35.1% agreed, 6.5% disagreed, 5.8% were undecided while 3.9% strongly disagreed. Results are depicted on table 10 pg. 38 below. The results suggest that horrendous infrastructure, lack of knowledge about IR, lack of ability to use the IR, perception of IR contents as being of lower quality, legal and copyright issues and insufficient funding remain the main issues that hinder adoption of the repository.

On the same issue, the senior library manager echoed similar sentiments, *“Despite numerous benefits IR offers, it is faced by a number of challenges. The main challenge affecting the adoption of the institutional repository is lack of skilled personnel to manage the repository. Both staff and*

students lack the necessary skills for using the repository. The digital platform is complex due to the diversity of materials included in the repository and this causes challenges to the staff. Staff needs to attend regular trainings and workshops to upgrade their skills.

The librarian further revealed that people were still not comfortable in depositing materials in the repository. There is also a general perception of content published in the repository being of low quality standards. Staff members tend to undermine the repository and prefer publishing their work through prestigious journals and other databases. Most of the academics and staff are not keen on promoting their research output through the repository for fear of their work being misused or plagiarized and that their work may not achieve the desired recognition. These challenges need to be addressed. There is also need to higher trained staff to manage the repository and acquire the necessary software and the right environment to host the repository. For instance, strong internet connectivity and stable power supply is paramount to ensure uninterrupted access of the repository”.

In terms of policy guidelines in place for the adoption of institution repository, the senior library manager confirmed, *“There is a well-established policy guideline in place on how to deposit materials in the repository. It’s a requirement to seek consent from the copyright holder before any work is uploaded onto the repository. However, this form is left at the faculty where depositors are required to sign as they surrender a copy of their work both in physical form and in a CD ROM. The problem observed is that some depositors do not comply and refuse to give authorization of their work.”*

The concerns raised about acceptance and use of IR are similar to those of Moseti & Mutula (2016:13), in their study, one of the researchers stated, *“sorry you cannot have my document there, I don’t care about the policy, you cannot have the document!”* The librarian ascribed the hesitancy caused by mistrust and unfamiliarity about the goals of the repository. The researchers seemed not to be aware of the importance of the repository and complained about their work might be plagiarized. Therefore, there is need for proper guidance and policies to guide on deposit and to ensure that necessary permissions were obtained to avoid infringing someone’s copyright.

Table 11: Challenges that Hinder Adoption of Institutional Repository

	Respondents number & percentage				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Lack of skills to use the institutional repository	0.6	2.6	3.9	45.5	47.4
Lack of awareness of IR	1.3	3.2	2.6	57.1	35.7
Legal and copyright issues		4.5	0.6	40.3	54.5
Perception of IR contents as being of lower quality	0.6	1.3	19.5	41.6	37
Inadequate funding	1.3	7.8	7.1	42.9	40.9
Poor ICT infrastructure	3.9	6.5	5.8	35.1	48.7

In terms of the necessary factors for the success of the institutional repository, the senior library manager argued that, *“Competent staff is a major element for developing a successful repository. Librarians in charge of the institutional repository need to have a clear understanding of digital technology like how to scan documents and recruitment of content. Academics too need to have the right skills to use the IR and self-archive”*. The platform should also be user friendly for the users to navigate with ease. These views are shared by Matthew (2012: 3) whose study revealed a commanding (90.3%) of librarians did not have ICT skills and that was a challenge to the usage. Likewise, a study by Okoye & Ejikeme (2010: 9) confirmed that, majority of the researchers did not have the competence to use and access the internet and this was a great obstacle to the adoption of IR. There is need to hire qualified personnel and offer more trainings to boost the skills of the staff in order to effectively manage the repository.

The senior librarian further continued to state, *“High quality content collection is also a requirement for the success of the institutional repository. Content should be reviewed before being deposited in the repository to ensure what is uploaded is relevant to the users”* (Nagra, 2012: 8) argues that, it is important to know the content, files and types of media for submission in the repository. There is need to conduct a user assessment of the research community in order to establish their needs. This can also help in formulating guidelines and policies.

4.9 Chapter Summary

The chapter presented the findings. The findings indicated that institutional repository is a platform for disseminating research output. But there is need for the university management to come up with serious mechanism of marketing and promoting the IR if its objectives must be achieved. As the study has revealed unawareness on the benefits of institutional repository as a research platform. There is also need for policy guidelines regarding the content being deposited as issues such as copyright are some of the reasons why people shy away from depositing. Finally, library staffs need to be trained on how to manage the repository since the study has confirmed lack of skills to effectively manage the repository. A synopsis of major findings, conclusions and recommendations are discussed in the next chapter.

CHAPTER FIVE

SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter presents the summary and discussions of the study findings including conclusions. The study further makes recommendations regarding adoption of institutional repository. Suggestions for further areas of research are also highlighted. The purpose of this study was to assess institutional repository as enabler of research output in academic institutions in Kenya with reference to KCA University.

Objectives of the study included to:

- Assess the level of awareness of IR as enabler of research output in academic institutions.
- Investigate the usage of institutional repository by researchers in academic institutions.
- Explore the role of the university management in adopting institutional repository in academic institutions.
- Propose an appropriate model for embracing IR as an enabler of research output in academic institutions.

5.2 Summary of the Findings

This part makes a presentation of the main research findings that were made. The research questions raised grounded on the above research objectives are answered in the section below as a follow up from the presentations depicted in chapter four (Data Analysis, Presentation, Interpretation and Discussion). The study's findings are summarized as follows:

5.2.1 Level of Awareness towards Institutional Repository

The first objective of this study was to assess the level of awareness of IR as a tool for research output. Several questions were asked to achieve this objective which included whether the IR was relevant in managing the research output, relevant and beneficial to the institution, if it offers solutions in terms of access and use of research output. The study findings revealed that 40.3% of the respondents who included librarians, faculty staff and students strongly agreed that IR will effectively manage the research output. In terms of whether the IR is relevant and beneficial to the institution and whether it will offer solutions in terms of access and use of research output, results

indicated that 64.9% and 40.9% strongly agreed that IR will be relevant and beneficial and will offer solutions in regard to access and use of research output. From the responses obtained, management need to offer the necessary support and infrastructure to make it possible for the IR objectives to be realized.

5.2.2 Investigating the Usage of the Institutional Repository

The second objective was to establish the usage of the institutional repository. Results revealed that majority of the respondents concurred with the fact that institutional repositories enhanced the visibility of the institution with a commanding 54.5% of the population strongly agreeing and 37% agreeing. Another major reason as revealed from the results was that the institutional repository promoted quality of teaching and collaboration with 55.2% of the population strongly agreeing to this statement while 34.4% of the same population agreeing. Other reasons according to the respondents were that the institutional repository promotes open archiving, it provides a platform for scholarly output, the repository enhances accessibility of resources in other locations apart from the library and that the repository increases visibility and prestige of researchers, with 49.4%, 40.9%, 44.8% and 36.4% of the respondents within the population strongly agreeing to these statements respectively. From the findings it can be deduced that, there is need to have institutional repositories in the universities so as to enhance the visibility, promote the quality of teaching and collaboration, promote open archiving and allow accessibility in other location apart from the library. Ezema (2011: 477) justifies the need for adoption of institutional repository by stating that, “what is obvious with open access movement is that there is democratization of availability and access to information and this will go a long way in bridging the information gap between the developed counties and the developing countries”.

5.2.3 Support of the Institutional Repository by Management

The third objective was to explore the role of the university management in adopting an institutional repository in academic institutions. Results revealed that most of the respondents felt that the university’s provision of infrastructure is the crucial most step towards acquiring the institutional repository. The bigger population wants the university to provide software required for setting up and hosting the repository. 59.7% of the population strongly agreed to this aspect while another 30.5% of the population is in agreement too. Another population also felt that

providing enough computers as part of the infrastructure needed for accessibility is an important aspect. This is evident with 59.1% of the population strongly agreeing to this aspect while 30.5% of the respondents being in agreement. Another aspect is the provision of leadership in the setting up of the repository with 42.9% of the population strongly in agreement that this is a very crucial aspect. Another 56.6% agreed that funding is needed to set up the repository system, while 33.8% agreed that as an enabler to research, the management must have strategies in place for the promotion and marketing of the institutional repository. Interview with the library manager reviewed that, the university could not provide all the types of research and facilities required in adequate quantities because of insufficient funds available.

5.2.4 Challenges that Hinder Adoption of Institutional Repository

The study also geared at finding out what challenges hinder adoption of an institutional repository in academic institutions. An overwhelming majority 54.5% of the population strongly agreed to the statement that legal and copyright issues are a hindrance to the adoption of an institutional repository. Another 48.7% strongly pointed out that the issue lies with poor infrastructure, while 47.4% of the population strongly pointed at the lack of skills to use the institutional repository. Other aspects included inadequate funding at 40.9%, perceptions of the institutional repository contents as being of lower quality at 37% and lack of awareness of the institutional repository at 35.7%. For the institutional repository to be successful, these challenges need to be addressed.

5.2.5 Proposed Model for Embracing IR

The final objective was to propose an appropriate model for embracing the institutional repository as enabler to research output in academic institutions in Kenya. In view of the study findings, an integrated model depicting the institutional repository as an enabler of research output in academic institutions in Kenya is proposed as illustrated in figure 4 pg. 46. The model guarantees that research output is pegged on several aspects. These aspects include research that is produced from both the faculty that is teaching at the university as well as the students studying. The research conducted by the faculty can take the form of knowledge shared to the students directly in class or information that is published in journal articles. The knowledge that these lecturers share in class becomes key in determining what the students will publish in the end. Similarly, policies that guide depositing of research publication are an important aspect since they define the limits needed for these publications to be deposited in the repository. The institution needs feedback from users that

are accessing publications. This will help them understand what impact to research the IR is making. The publications need appropriate infrastructure to enable the content to be shared to the information researchers. The infrastructure will include tools such as the enabling software as well as networks to facilitate sharing of the research output. There is also need to have people who are skilled enough to manage the knowledge acquisition, knowledge processing, archiving and preservation and knowledge sharing of the research output as per existing policies. All these aspects should work together to enable effective research output.

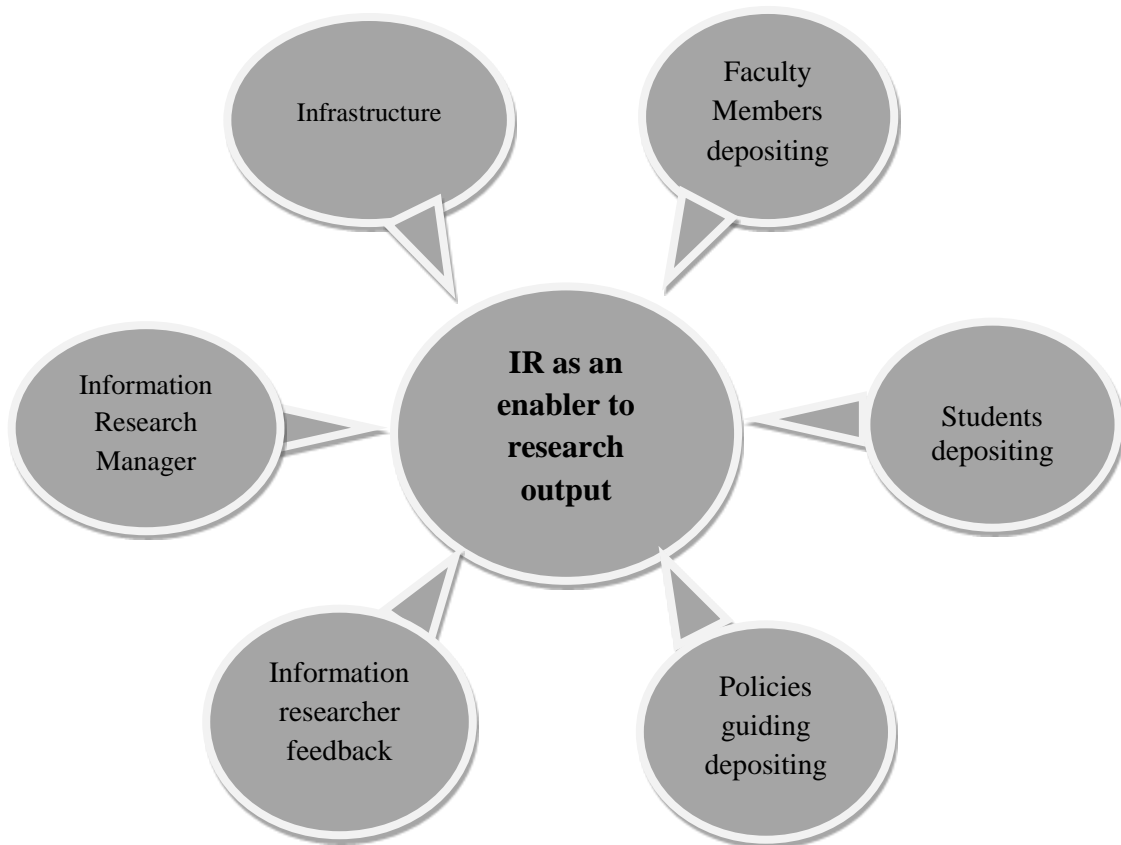


Figure 3: Proposed model for embracing Institutional Repository

5.3 Conclusion

From the findings and discussions made in the study, this study made the following conclusions: IRs have gained relevance and especially to the academic institutions. Although respondents indicated lack of awareness about the repository. Benefits to the institution and to the individual are many including increased visibility and ranking of the institution.

Aggressive marketing and promotion strategies are needed in order to promote awareness to the researchers. Orientation and training on the usage of the repository was an effective intervention strategy that has the potential to enhance usage. Majority of the clients indicated lack of training on the use of the repository and this calls for serious user education and staff training because it was evident that the training offered was not adequate.

Management support and commitment is also vital for the success of the repository by formulating policy guidelines directing the clients on rights and limitations of access and limitation of use of repository materials. In addition, management also needs to provide the right infrastructure and personnel to manage the repository. There is need for the library to acquire its own generator to ensure uninterrupted power supply.

5.4 Recommendations

In order to make IRs more effective and lasting, the study recommended the following:

- An all-inclusive promotion and marketing of the benefits accrued from IR to the faculty members and other interested party. These will create awareness to the scholars on the open access platforms where they can publish their research work. Different mechanisms should be employed such as: website, emails, library orientation, information literacy classes as well as social media platforms, for instance Facebook and Twitter. Librarians should also organize more workshops and trainings.
- Formulation of policies to guide on ownership, quality standards, copyright issues and IR contents among others to support adoption of IR. The policy should be revised to include mandatory submission of research work to the staff members. This is a way of growing the repository.

- The authorization forms be signed at the library where the repository is hosted so that clients can get an opportunity to be enlightened by the librarians who are more knowledgeable in this area on the benefits of submitting their work through open access platforms such as the repository. Therefore, proper coordination between faculty and library is needed to ensure these guidelines are enforced.
- Establishment of assorted research and educational support facilities including e-print request, correspondences, locked access deposit done in IRs to serve the researcher community and academia.
- Need for sufficient supply of resources such as funds, adequate space, technology and human.
- The library to acquire its own generator to ensure uninterrupted power supply. At the moment there is only one generator supplying power in the whole university in case of power outage which is not adequate.
- Librarians, academic and ICT staff to acquire the necessary skills to be able to manage the repository.
- University management to acknowledge those who have submitted their work as a way of encouraging many more to deposit their work onto the repository.

5.5 Suggestions for Further Research

The results from this study are very informative and valuable and the researcher suggests further research on academics' attitude toward the adoption of IR as a platform for scholarly communication.

5.6 Chapter Summary

The results of this study reveal that IR is a scholarly platform that has been embraced at the university. However, the identified issues such as fears of research ideas to be stolen or plagiarized are some of the reasons that prevent authors from submitting their work to the repository. Financial resources are also limited, management need to increase the budget allocation in order to buy all the equipment's required such as scanners and add more computers. In addition, there is need for better marketing strategies and promotion approaches. Finally, support of all stakeholders is fundamental to the success of IR.

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APPENDICES

APPENDIX I INTRODUCTION LETTER FROM THE UNIVERSITY



UNIVERSITY OF NAIROBI

FACULTY OF ARTS

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

Telephone: +254 20 318262, Ext. 28095
Telegram: Varsity
Fax: +254 20 2245566

P.O. Box 30197- 00100 GPO
Nairobi, Kenya.
dnjiraine@uonbi.ac.ke

Our Ref: UON/CHSS/FOA/DLIS/303C

Date 28/09/2017

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: RECOMMENDATION FOR NJOROGE REGINA – REG NO: C54/83869/2016.

The above named is a bonafide student at the University of Nairobi undertaking a Master of Library and Information Science (MLIS). She is currently in the process of collecting data as part of the requirements for the course.

Her topic is “Assessing Institutional Repository as an Enabler of Research output in Academic Institutions in Kenya: the Case of KCA University”.

Any assistance accorded to her will highly be appreciated.

Regards,



Dr. Dorothy Njiraine
Ag. Chairperson
Department of Library & Information Science (DLIS)

APPENDIX II INTRODUCTION LETTER

Regina W. Njoroge,
P.O. Box 56808- 00200,
Nairobi.

Dear respondents,

RE: RESEARCH INFORMATION FOR MASTERS PROJECT

I am a postgraduate student undertaking a Master of Library and Information Science at the University of Nairobi. As a partial fulfillment of the requirements for the award of the master's degree, I am undertaking a study on **“Assessment of institutional repositories as enabler of research output in academic institutions in Kenya with reference to KCA University.** The objectives of the study are to: examine the level of awareness of IR as a tool for research output, investigate the usage of IR by researchers at KCA University, explore the role of the university management in adopting IR and propose solutions to the identified challenges regarding embracing IR as an enabler to research output. The study will be of beneficial to the academic institutions because the findings will recommend suitable measures to facilitate the usage of institutional repositories therefore, increasing the visibility of the research output of the academics and researchers within the institutions. I kindly request you to complete the attached questionnaire to enable me collect data regarding the topic under investigation.

The information you provide in this study will only be used for the intended academic purpose and will be treated with utmost privacy.

Thank you in advance.

Yours faithfully,

Regina Njoroge
Master Student

APPENDIX III QUESTIONNAIRE FOR STAFF AND STUDENTS

INSTRUCTIONS

Please indicate your response by ticking the provided boxes (√). For questions that require suggestions or comments, please use the provided space.

PART I: General Information

1. Which of the following best describes you at KCA University?
 - a. Librarian
 - b. Lecturer
 - c. Student
2. Gender
 - a. Male
 - b. Female
3. Highest Level of Education
 - a. Diploma
 - b. Undergraduate
 - c. Postgraduate
 - d. PhD
4. Age
 - a. 26-30 years
 - b. 31-40 years
 - c. 41-50 years
 - d. 51-60 years
 - e. Above 60 years
5. How did you learn about the availability of institutional repository at the university?
 - a. Library orientation
 - b. Library website
 - c. Brochures
 - d. Social media platform such as Facebook and Twitter
 - e. Seminars and workshops organized by the library

f. From colleagues

g. Any other.....

PART II

Level of awareness towards institutional repository

6. In this section, please tick against the box which corresponds to the answer that closely resembles your opinion regarding the level of awareness towards the use of the repository. Use the following scale: **Strongly Agree=5, Agree= 4, Neutral=3, Disagree= 2 Strongly Disagree= 1**

NO.	STATEMENTS	5	4	3	2	1
1.	Effective in managing the research output					
2.	Relevant and beneficial to the institution					
3.	Offers solutions in terms of access and use of research output					

7. How can you rate the level of training in relation to the use of institutional repository at the university?

a) Very high level of training

b) Highly trained

c) Moderately trained

d) Low level of training

e) Not trained at all

Reasons for using the institutional repository

8. To what extent do you agree or disagree with the following statements in relation to the reasons for using the institutional repository.

NO.	STATEMENTS	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Enhances visibility of the institution					
2.	Provides a platform for scholarly output					
3.	Promote quality of teaching and collaboration					
4.	Accessibility of resources in other locations apart from the library					
5.	Promotes open archiving					
6.	Increase visibility and prestige of researchers					

9. In your own opinion, what strategies should be put in place to ensure smooth usage of institutional repository?

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Support of institutional repository by management

10. Please indicate from the list below the level of support of institutional repository by management. Use the following scale: **Strongly Agree=5, Agree= 4, Neutral=3, Disagree= 2 Strongly Disagree= 1**

NO.	STATEMENTS	5	4	3	2	1
1.	Provides enough computers					
2.	Provides the required software for hosting the repository					
3.	Provides scanners for digitization					
4.	Provides leadership in the setting up of the repository					
5.	Provides training and workshops about the use of institutional repository					
6.	Provides enough funds for the repository					
7.	Have strategies in place for promoting and marketing institutional repository					

11. How do you perceive the institutional repository support provided by the university management?

- a) Good [] b) Poor [] c) No opinion []

Challenges that hinder adoption of institutional repository

12. In the spaces provided in the grid, kindly indicate by ticking appropriately to each statement depending on your level of acceptance in relation to the challenges that hinder adoption of Institutional Repository.

NO.	STATEMENTS	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Lack of skills to use the institutional repository					
2.	Lack of awareness of IR					
3.	Legal and copyright issues					
4.	Perception of IR contents as being of lower quality					
5.	Inadequate funding					
6.	Poor ICT infrastructure					

13. In your own opinion, suggest possible solutions to the identified challenges.

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Thank you for your time

APPENDIX IV

INTERVIEW GUIDE FOR SENIOR LIBRARY MANAGEMENT

1. What measures have you put in place to ensure successful adoption of the institutional repository?
2. In your opinion, what are the major challenges that affect the staff and student's willingness to participate in populating the institutional repository?
3. What should be the role of librarians in encouraging and facilitating staff and students deposit into the university repository?
4. In your opinion, what are the necessary factors for success of institutional repository initiatives at the university?
5. What strategies have you put in place for marketing and promoting the institutional repository?
6. What are the policy guide lines in place for the adoption of institutional repository?