FACTORS INFLUENCING USE OF OPEN ACCESS REPOSITORY: A CASE OF KENYA METHODIST UNIVERSITY

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DECLARATION

I declare that this thesis is my original work and has not been presented for examination in any other institution. All materials from any other sources have been duly acknowledged.

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We confirm that the work reported in this thesis was carried out by the candidate under our supervision.

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DEDICATION

This thesis is dedicated to my parents Julius Mwiti and Florence Mwiti, my dear husband Yusuf Akwalu and daughter Abigael Neema, and my three sisters Jeddy, Miriam and Mercy. Your love and support during the study period has made this happen.

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ABBREVIATIONS AND ACRONYMS

HTML: Hypertext Markup Language

ICT: Information Communication Technology

IDT: Innovation Diffusion Theory

IP: Intellectual Property

IR: Institutional Repository

KeMU: Kenya Methodist University

OA: Open Access

OAC: Open Access Committee

OAJs: Open Access journals

OAI: Open Archive Initiative

OAP: Open Access Policy

OpenDOAR: Directory of Open Access Repositories

SPSS: Statistical Package for Social Science

UON: University of Nairobi

URL: Uniform Resource Locator

UTAUT: Unified Theory of Acceptance and Use of Technology

ABSTRACT

Institutional repositories (IR) are one of the innovations adopted by academic libraries to embrace the open access initiatives that advocate for free online access of scholarly research. Globally academic institutions are using Institutional repositories (IRs) as channels for capturing, archiving and disseminating their scholarly works. As (IRs) matures they encounter difficulties on how to of how to improve their operations to proliferate the number and variety of content archived. This study investigated factors influencing the use of KeMU institutional repository as a tool for enhancing open access. The specific objectives that guided the study were to: Examine Institutional Repository and Open Access concepts awareness level among the academic staff at KeMU; Assess to what extent do the library staff advocates the use of KeMU IR as a tool for enhancing Open Access; Explore how user perception on open access publications influence the use of KeMU repository; Examine factors deterring content submission by academic and library staff to the KeMU Institutional repository.The study adopted both Innovation Diffusion Theory (IDT) and social exchange theory and, employed a quantitative research design and probability sampling techniques. The study population constituted 130 respondents and a sample of 98 was drawn using Yamane formula to calculate sample size for proportions. Data was collected using a questionnaire. The response rate was 84%. Data analysis was carried out descriptively using statistical package for social science (SPSS) version 20 and presented in form of tables and figures. The study found out that low levels of awareness on IR concept, lack of enthusiasm in advocating for the use of an institution repository, the negative perception towards the content submitted in an institution repository as well as lack of awareness on the benefits associated with submitting articles in a repository are some of the factors hindering use of KeMU repository. The study concluded that for KeMU repository to be vibrant in enabling open access of scholarly work, there should be a well laid out advocacy program to address issues relating the existence of KeMU institution repository and the importance of submitting research works in the repository. The study recommends senior university managers be sensitized on the importance of IR and why they should play a proactive role in enhancing use of the KeMU repository.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Technology has rapidly developed over the past years; this swift development of technology has provided remarkable opportunities for academic libraries to move from being custodians of books to intermediary of information resources. The academic libraries are quickly adopting radical technological inventions to fulfill the needs of their users. Wu, 2015 notes that Institutional Repositories (IR) are one of the innovations adopted by academic libraries to embrace the open access initiatives that advocate for free online access of scholarly research. The Open Access (OA) initiatives involves making resources freely available globally. The three influential public statements that give the definition of open access include; Budapest open access initiative 2002, the Bethesda Statement on Open Access Publishing of June 2003, and the Berlin Declaration on Open Access of October 2003.

The 2003 Bethesda Statement and 2003 Berlin Declaration on Open Access describes Open Access as where the authors' and copyright holders' deposit their entire research work and all supplementary materials, together with a copy of the authorization declaration in at least one online repository. In the two statements the author or copy right holder grants all users a free, irreversible, permanent right of access to, and an authorization to copy, use, dispense, transmit and display the work openly and to make and distribute unoriginal works, in any electronic platform for any accountable purpose,

as well as the right to make few copies of printed work for their personal use. On the other hand, the 2002 Budapest open access initiative described open access as, literature, freely available on the public internet, allowing any users to search, read, download, copy, print and also enabling link to the full texts of these articles in order to crawl them for indexing, pass them as data to software, or use them for any legitimate purpose, without legal, financial, or technical barriers other than those inseparable from gaining access to the internet itself.

The motivations behind Open Access initiatives included; the high subscriptions rates, which were demanding to get, large price difference between individual and institutional subscription rates and finally the huge subscriptions for journals paid up by libraries and resulted to be more restrictive. Open Access facilitates increase of visibility and accessibility of; research outputs of an institution, researchers' profiles, scholars and the academic community. Open Access also enables promotion of scholarly research as a public and enhance improved rating of research institutions internationally.

Libraries in Africa have established institutional repositories as a push to embrace Open Access initiatives. According to the World Repository Map, currently there are approximately 3090 repositories internationally registered with Europe emerging out as the top contributor with 1377 (45%) repositories followed by Asia 634 (20%), North America 580 (19%), South America 269 (9%), and Africa 136 (4%) (''Open DOAR summaries 2016'').

The Open Access (OA) movement in Africa is slowly gaining pace, as at 2016 Open DOAR summaries there were 136 Open Access digital repositories in the region which

were registered. This was an 8 percent increase from the 125 Open Access digital repositories registered in 2015. South Africa has the highest number (31) of repositories listed repositories listed while Kenya follows closely with 22 repositories listed in the world repository map (OpenDOAR-chart-Africa, 2016).

The IR concept in Kenya gained thrust in 2009 when two Kenya Library and Information Services Consortium (KLISC) members were funded by International Network for the Availability of Scientific Publications (INASP) attended an Open Access workshop in South Africa and there after a one-week attachment at the University of Pretoria. On return the two KLISC members began trainings on Open Access institutional repositories to sensitize other KLISC members. Through the support of Electronic Information for Libraries (EIFL) and INASP Open Access workshops and conferences were conducted with KLISC members. In 2010, Electronic Information for Libraries EIFL supported the first Open Access workshop in Kenya. Since then, EIFL has worked with a variety of local stakeholders to create awareness, support Open Access program and provide hands-on training to motivate, support and develop Open Open Acesss repositories at institutions of higher learning in Kenya. Following the Open Access workshops About 30 of the KLISC member institutions are said to have established, or are in the process of establishing institutional repositories. However, (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2016), noted that the Open Access initiative has been embraced in Kenya but to a small extent and therefore it is the obligation of the government, government institutions, academic and research organizations, to provide financial and moral support to ensure

implementation and reinforcement of Open Access is cascaded down to all Kenyan institutions.

According to Lynch (2003), institution repository are said to be mature and fully valued when it consist of the intellectual works of faculty and students, and also contains documentation of the activities of the institution itself in the form of records of events and presentation of the ongoing intellectual life of the institution. Mature and fully realized institutional repository also houses raw data captured by members of the institution that support their scholarly activities (Lynch, 2003).

Studies have shown that institutions of higher education across the world, Kenya included, generate plenty of intellectual outputs from research conducted by the faculty, staff and students. However, most of the knowledge produced is not globally accessed instead it is accessed by the author and sometimes the academic community that reach the author. Swan and Brown (2007) noted that globally academic staff were high consumers of repository content however research outputs submission to institutional repositories by the academic staff was very low. Observations from Grundmann (2009) and Muller (2009) studies, agrees with Swan and Brown that the difference between uses of research works in the institutional repository and deposit of works to the repository by their faculty members was very low, resulting in almost empty institutional repositories. This situation is not different from what is happening in Kenya. Mutwiri (2014) studying the hindrances faced by academic staff in the effort of adopting use of Open Access outlets to publish their research works in selected universities in Kenya found out that, majority (74%) of the academic staff used research works deposited in the institution

repositories. From Mutwiri study only 21 percent of institution repository users had forwarded their research works in an institution repository. The findings of this study concurs with Talam (2014) study on integration and use of institutional repositories in public universities: the case of the University of Nairobi showed that 14 percent of the respondents (library staff and students), had deposited work in the institution repository while the remaining 86 percent had not deposited their work to the repository, this indicates that many people are consumers of institution repository content but not prolific to its growth

Kenya Methodist University (KeMU) institutional repository was launched in October 2013 as an initiative of KeMU Library. The main aim for establishing KeMU institution repository was to encourage high standards in the administration of research outputs online; provide long-lasting preservation of the University's scholarly outputs; rise the visibility and impact of the University's scholarly outputs and develop cooperation with the global research community. Institutional repository complements the traditional research publishing channels not a replacement and its aim is to freely make available scholarly output from the academic activities carried out at the University. Since establishment and launch of KeMU institution repository only 284 items have been deposited in the institution repository and most of the items are abstracts. The greatest challenge facing the KeMU institution repository is low content submission.

Madsen and Oleen (2013) noted that as an institution repository matures, it encounters the challenge of balancing its operations to achieve increase in the number and diversities of content archived. Staffing, systems, workflows, and promotion were some of the challenges noted (Madsen & Oleen, 2013). Though literature relating to content,

operation, and promotion of a newly established institutional repository is emerging there are fewer articles describing institution repository progress and content developments as repository matures and grows in size. This study specifically investigated the factors influencing the use of KeMU institutional repository as a tool for enhancing open access.

1.2 Statement of the Problem

Globally academic institutions are using institutional repository as a channels for capturing, archiving and disseminating their scholarly works. However, Content recruitment process that persuade researchers to submit their research output in an institutional repository remains to be a major concern in institutions of higher learning. McDowell, 2007 census of institutional repository in the US recounted that repository managers had difficulties recruiting content from faculty and graduate students, and the more mature the repository was the more uncertain the repository staff were on the success of any content recruitment strategy. Similar findings, have been echoed in many other research of individual repositories, and dare the essential open access philosophy that views institutional repositories as the recent alternative avenue for the scholarly publishing (McDowell, 2007).

According to OpenDOAR repositories statistics, Kenya was rated second in Africa with 120,771 items deposited. The University of Nairobi repository was recorded to have the highest number of items deposited in its IR (78,400) this is closely 64 percent of the total number of items deposited by scholars in different institution repositories in Kenya. Kenya Methodist University (KeMU) institutional repository is yet to be registered to

the repository but records show that since its establishment and launch in 2013 only 284 items have been deposited in the institution repository. The gap between the number of items deposited at KeMU institution repository and other repositories in Kenya is very large hence this necessitated this study to be carried out so that the researcher may find out some of the factors that are hindering growth of institution repository at KeMU.

The challenge of low content submission facing KeMU institution repository is not an exception; Studies have shown that there is always slow response and contribution by faculty members. However, there has not been a systematic documentation on the reasons for the low or no deposition of research works by academic staff at KeMU, hence this study is going to fill this gap.

Given the unwillingness of academics to deposit their research output, implies that institutions with the desire to proliferate their institution repository content deposit (and use) need to aggressively advocate the concept of institutional repository within their institutions. Talam (2014) noted that the tremendous growth at the university of Nairobi repository would be linked to the high level of awareness among its faculty members; this is in agreement with Mutwiri (2014) study that indicated that 68.6 percent of the faculty members at the University of Nairobi were aware of the existence of university of Nairobi repository. Records indicate that only (6) 2% items have been submitted by academic staff at KeMU IR.

Low content submission may also infer that the key stakeholders in research do not see repositories as part of the publication process. Rieger (2007) noted identifying repository key stakeholder and involving them in the decisions regarding selection of an institution

repository model and its operation would be a perfect way of enabling uptake and implementation of IR success.

At Kenya Methodist University several factor such as lack of awareness, negative user perception towards repository content and low advocacy measures by the library staff may have led to low content submission by the academic staff. Therefore, this study was set to investigate how various factors would be influencing use of open access repository at Kenya Methodist University.

1.3 Aim of the Study

The aim of the study was to investigate the factors influencing the use of open access repository at Kenya Methodist University.

1.4 Objectives

The objectives of the study were to:

i. Examine how open access repository concept awareness level among the academic staff influences the use of Kenya Methodist University repository.

ii. Assess the extent to which the library staff advocates the use of IR as a tool for enhancing Open Access at Kenya Methodist University.

iii. Explore how user perceptions on open access publications influence the use of Kenya Methodist University repository.

iv. Examine factors deterring content submission by academic and library staff to the Kenya Methodist University repository.

1.5 Research Questions

The study was guided by the following research questions: -

i. To what extent does the awareness level of open access repository concept influence the use of KeMU repository?

ii. To what extent do the library staffs advocate the use of institutional repository as a tool for enhancing Open Access at Kenya Methodist University?

iii. How do the user perceptions on open access publication influence their access and use of KeMU institutional repository?

iv. What are the factors deterring content submission by academic and library staff to the KeMU Institutional repository?

1.6 Assumptions of the Study

This study was based on the assumption that open access concept was well understood by the respondent and the responses provided by the respondents were genuine and sincere.

1.7 Justification

Institutional Repositories and Open Access journals (OAJs) are the new avenues for the dissemination of intellectual research works. These open access outlets (Institutional Repositories and Open Access journals) have changed and redefined the reputable connection among authors, publishers and academic libraries; they provide access to intellectual works freely without any restrictions.

In the past decade, increase in development of Institutional Repositories (IRs) in academia has been realized, with academic libraries taking the task of building and

maintaining IRs systems and create awareness among its user community on the effectiveness repository systems. The rising number of repositories shows that academic institutions have acknowledged this method of publication and the institutions' starring role in disseminating scholarly work. However, volume and scope of IR contents is one of the measures of the success of an IR. Participation of the academic institution's scholarly community determines the range and depth of scholarship in the IR. The more frequently faculty members submit content to an IR, the larger its content size is, and subsequently increase in its use.

Globally institutions of higher learning have adopted digital repositories. However, the content growth of the IR is generally limited with individual scholars and researchers showing less enthusiasm. Much emphasis has been placed on building institutional repositories, but little has been done on evaluating their operations and outputs. Literature has revealed that faculty do not hasten to contribute in their IRs. The purpose of this study was to investigate the factors influencing use of open access repository at Kenya Methodist University.

1.8 Significance of the Study

The study findings shall contribute new knowledge on the current literature in the area of institutional repositories. The study tested and consolidated the factors that influenced the use of Open Access repository to enhance open access of scholarly work at Kenya Methodist University and document them.

The understanding of the factors that influence the growth of the IR and the benefits of Open Access through the institution repository will go a long way in the management,

development and implementation of institutional repository and open access policy at KeMU. From the findings of the study the university management may devise strategies that will lead to increased volume and scope of the IR content so as to improve the university web presence.

The factors that deter academic staff of KeMU from contributing their scholarly work to IR were realized and possible solutions to these factors discussed. Areas where the academic staff require more sensitization were also revealed. These findings study would act as an eye-opener to library staff when developing advocacy programs, hence increasing submission and use of the IR. The increased faculty contribution of research works will be useful to the library staff in building up its university's academic databases hence increasing their visibility with other world universities; this will give the university equal contribution scholarly works as compared to other world class universities through Institutional Repository.

1.9 Scope of the Study

The research was carried out at Kenya Methodist University (KeMU). Kenya Methodist University is an autonomous Christian institution of higher learning, situated in Meru on the North Eastern slopes of Mount Kenya, Meru county and five kilometers from Meru town. The university has four campuses within Kenya which are situated in Nairobi, Nakuru, Mombasa and Nyeri.

The study was limited to KeMU main campus only since it had the highest number of library and academic staff stationed there; therefore, research findings of the study may be generalized to the other four campuses.

The study was restricted in scope to analyze the factors influencing growth of institutional repository to enhance open access. The researcher targeted the academic and library staff. The selection of the academic and staff to participate in the study was appropriate because library staff were generally involved in the operations of the institutional repository while the academic staff are the key contributors to the IR content and were able to tell the situation on the ground. The selection of the target respondent gave the researcher a broad understanding of the study hence making the results more comprehensive.

1.10 Operational Definition of Terms

Academic staff - An educator who works at a college or university (Macmillan, 2007).

Dspace – is an open source software platform that enables institutions to capture and describe digital works using a submission workflow module, distribute an institution's digital work over the web through a search and retrieval system and also preserves digital works over the long term (Yeates, 2003).

Institutional repositories - are digital archives of intellectual products created by faculty, staff, and students of an institution and accessible to end users both within and without the institution, with few if any barriers to access (Association of Research Libraries, 2004).

Open access: is defined as where digital content is fully, freely, immediately and permanently available and can be viewed and reused with minimal restrictions (adapted from Pinfield, 2009).

Repository – is defined as a set of systems and services which enables the ingest, storage, management, retrieval, display, and reuse of digital objects. Repositories may be set up by institutions, subject communities, research funders, or other groups. They may provide access to a variety of digital objects, including peer-reviewed journal articles, book chapters, theses, datasets, learning objects, or rich media files" (Pinfield, 2009).

Self-archiving: Self-archiving is the practice of placing digital versions of scientific literature online. When you self-archive your research, you make it freely available to anyone on the Internet. In other words, self-archiving makes your research widely "visible, accessible, harvestable, searchable, and useable,"[1] thus increasing its reach and impact, and possibly the number of citations it receives (Clarinda Cerejo 2014**)**.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter two reviews relevant literature in relation to institutional repository and how it enhances the achievement of open access. Towards the achievement of this, the chapter was divided into the following subsections: (a) Theoretical framework, where the Social exchange theory and innovation diffusion theory (IDT) theory were discussed,

(b) Conceptual framework, where the independent variables of open access and institutional repository awareness level, institutional repository advocacy, user perception on institutional repository use and low content submission were also discussed. Lastly, (c) the chapter presents an empirical review of literature, (d) a critical review of existing literature, and (e) outlines research gaps arising from reviewed literature.

2.2 Theoretical Framework

Institutional Repositories (IRs) act as outlets for disseminating and preserving scholarly research and publications. However, to achieve institutional repository success, contribution from the faculty members and researchers is vital.

Various theoretical models such as; Unified Theory of Acceptance and Use of Technology (UTAUT), Socio-technological theory, Social Exchange Theory and innovation diffusion theory (IDT), have been used to discuss researchers' attitude, usage level and content contribution to institution repositories. The Unified Theory of

Acceptance and Use of Technology (UTAUT) was developed in 2003 by Venkatesh, Morris & Davis. The UTAUT theory is a technology acceptance model that is used to measures the user recognition to use new technologies and the ability of the user to deal with the technology. The use of UTAUT model when introducing a new technology aids decision makers when evaluating the success of the new innovations. UTAUT model is also well applied when motivating users to accept the use of a system. The theory consists of four main concepts namely; performance expectancy, effort expectancy, social influence, and facilitating conditions. The four concepts of the theory are said to be independent variables which have an impact on the dependent variables such as behavioral and usage.

The UTAUT theory has been applied by different researchers when studying user's attitude towards accepting use of institutional repository as a tool for enhancing open access; For example, Mann, von Walter, Hess, & Wigand (2008) used the theory to study open access publishing in science and why few people used these avenues despite being often appreciated. The finding of Mann study reviewed that respondents choose open access publishing over traditional publishing stating that open access enabled a wide readership and rapid dissemination of information. Hedlund (2008) empirical research on user attitude and preferences used the UTAUT model as an explanatory model to examine researcher's attitudes towards open access and institutional repositories. Dulle&Minishi-Majanja (2011) used UTAUT theory to study the acceptance and usage of open access within public universities in Tanzania. Dulle study reviewed and performance expectancy, attitude, effort expectancy and awareness, were established as the key factors inhibiting open access usage. Wirba and Abrizah (2010)

used UTAUT model to investigate Malaysian researcher's level of awareness, adoption and readiness to self- archive in institutional repositories. Despite the high use of UTAUT model in several studies Björk et al. (2013) noted, a major weakness in the analysis of the studies where green and gold open access were conflated. Singeh, Abrizah, & Karim (2013), also casts some uncertainty on the utility of UTAUT theory since they did not find a correlation between UTAUT concepts and use behavior associated with repositories. However, the authors recommend further research to test their conclusions since; theirs was a small-scale study and found at least a positive relationship between the UTAUT concepts.

Socio-technological theory is another theory used to describe the interaction between use of technology in work place and people. As highlighted by Cartelli (2007) Socio-technical theory adopts the use of two sub-systems in an organization which include the technical sub-system and the social sub-system. According to Cartelli the technical sub-system, is the sum of the equipment in the organization and is constantly in control of the system input and output translations to ensure sure the system objectives are achieved. On the other hand, the social sub-system, is the technical control tasks performed by people; where various responsibilities are assigned to individuals or groups. Hence, this theory can be used to study the use of institutional repositories as a system where the institution where the institutional repository resides plays the role of work place, while the software and hardware used in establishment of institutional repository take up the role of technological subsystem and finally contributors to the repository such as researchers, students, and faculty members assume the role of a social subsystem.

A third theory used to explain acceptance and use of institution repository and open access is the Social exchange theory. The social exchange theory was introduced by a sociologist George Homans in 1958 when he studied social behavior as an exchange. Homans explains social exchange as the process of bargained exchange among parties within a community and are in a position to influence each other. Social exchange theory hypothesizes that human activities are formed by the use of a subjective cost-benefit analysis and the comparison of alternatives.

According to social exchange theorist's individuals engage in social exchange for four reasons: expected mutual benefit, probable gains in reputation and influence on others, insights of self-efficacy and self-worth, direct reward to social, professional/career, or financial. Kim (2011) used Social Exchange Theory to study faculty self-archiving practices, where a number of factors influencing repository implementation were identified. The study further noted that awareness of open access advantages to users, disciplinary norms, and no negative influence on academic reward motivated faculty self-archiving discipline. Social exchange theory has also been used in other studies by Kankanhalli (2005): McLure, Wasko and Faraj 2005 where information sharing behavior among professionals was expounded. According to McLure-Wasko & Faraj (2005), social exchange theory individuals are motivated to network or share information and knowledge with one another with the expectation that doing so would lead them to a reward, enhanced status or respect. In the academic environment, faculty members are motivated to participate institutional repository content submission if they perceive

doing so may lead to a social or professional reward in the form of increased readership, research impact and citation rates, peer respect and career advancement.

A final theoretical model used to describe user behavior and usage of institution repository is Rogers's Innovation Diffusion Theory (IDT). Innovation diffusion theory (IDT) provides a conceptual framework for explaining how and why new innovations or ideas are adopted differently by certain groups. The word *diffusion* relates to the unstructured or planned means through which an innovation is communicated. According to Rogers innovation diffusion is defined as the process through which an innovation is transmitted among members of a social system over time through certain channels. The five key features that guide adoption of an innovation according to IDT includes; relative advantage (how advantageous is the innovation than the earlier ideas or process), compatibility (how an innovation is consistent with the existing values and norms), complexity (ability to easily understand and use), trial-ability (ability to be experimented during the process of adoption) and finally observability (if it is being seen used by other communities).

Innovation diffusion theory has been used by different authors to study adoption of institution repository as an innovation for enhancing open access among the scholarly community. Kingsley's (2008) mapped IDT theory to empirical findings from qualitative interviews with academic staff and concluded that institutional repositories impeccably characterize Rogers's concept of an innovation as an idea, practice or object that is perceived as new by an individual or other unit of adoption. According to Kingsley (2008), institutional repository as an innovation of disseminating scholarly work is more

likely to be adopted by its institutional members if it seems to be valuable to submit research work in the repository. Adoption of the repository also depends on whether it is consistent with existing publishing and research practice. Usability, accessibility and functionality of the repository also contribute to it adoption. Xia, Gilchrist, Smith, Kingery, Radecki, Wilhelm, and Mahn, (2012) used Innovation Diffusion Theory (IDT) differently to describe different adoption patterns of Open Access journals and institution repository worldwide. Xia analysis integrates argument of technological, cultural and policy factors that influence varying take-up of institutional repository globally. The studies using Innovation Diffusion Theory (IDT) between them illustrated a specific strength of the Theory in that it can be used to describe adoption characteristics both locally and globally, where locally the behavior of individual players is studied while globally the cultural and technological trends extensively incorporated.

The focus of this study was to assess the factors influencing use of open access repository at KeMU and adopted both Innovation Diffusion Theory (IDT) and social exchange theory

In this study, open access repositories were taken as a new innovation. According to Rogers's innovation diffusion theory, an innovation is perceived to be easy to understand and use as well as advantageous than the procedures it surpasses, therefore it is more likely to be adopted. Institutional repository as an innovation of disseminating scholarly work is more likely to be adopted by its institutional members if it seems to be valuable to submit research work in the repository. Adoption of the repository also depends on whether it is consistent with existing publishing and research practice. Content in institution repositories have the benefit of global visibility and openness compared to

print resources. Increased awareness of IR benefits among academic staff would make them adopt use of the repository while lack of awareness would prevent academic staff from using Institutional repositories (IRs) as channels for capturing, archiving and disseminating their scholarly works.

According to Social exchange theory information and knowledge would be shared by individuals based on the reward they expect in sharing the information. Therefore, in an academic environment such as KeMU faculty members will be motivated to participate in repository content submission if they are aware of the professional rewards such as research impact and citation rates. Low awareness levels of various institutional repository concept and benefits of depositing research works in an institution repository is a factor that may hinder use of open access repository.

The two theoretical approaches helped to explain how the five characteristics of innovation in the Rogers theory influence acceptance of institutional repository as a tool for enhancement of open access to scholarly work at KeMU and how the four key motivations factors for social exchange could be hindering the use of open access repository at KeMU. The four key drives for participation in Social Exchange theory and five characteristics of Roger's innovation theory were also used to guide the process of generating data-collecting instrument.

2.3 Conceptual Framework

A conceptual framework is used to illustrate the relationships between the variables that the study identifies as being of importance to the research problem. There a number of variables that relate to factors influencing the use of KeMU institutional repository as a tool for enhancing open access. This study conceptual framework was based on independent variables such as; institutional repository and open access awareness level among the academic staff, role of library staff in advocacy of IR use, user perception on open access publication and factors deterring content submission by academic staff. The dependent variable was use of open access repository

Conceptual frame work
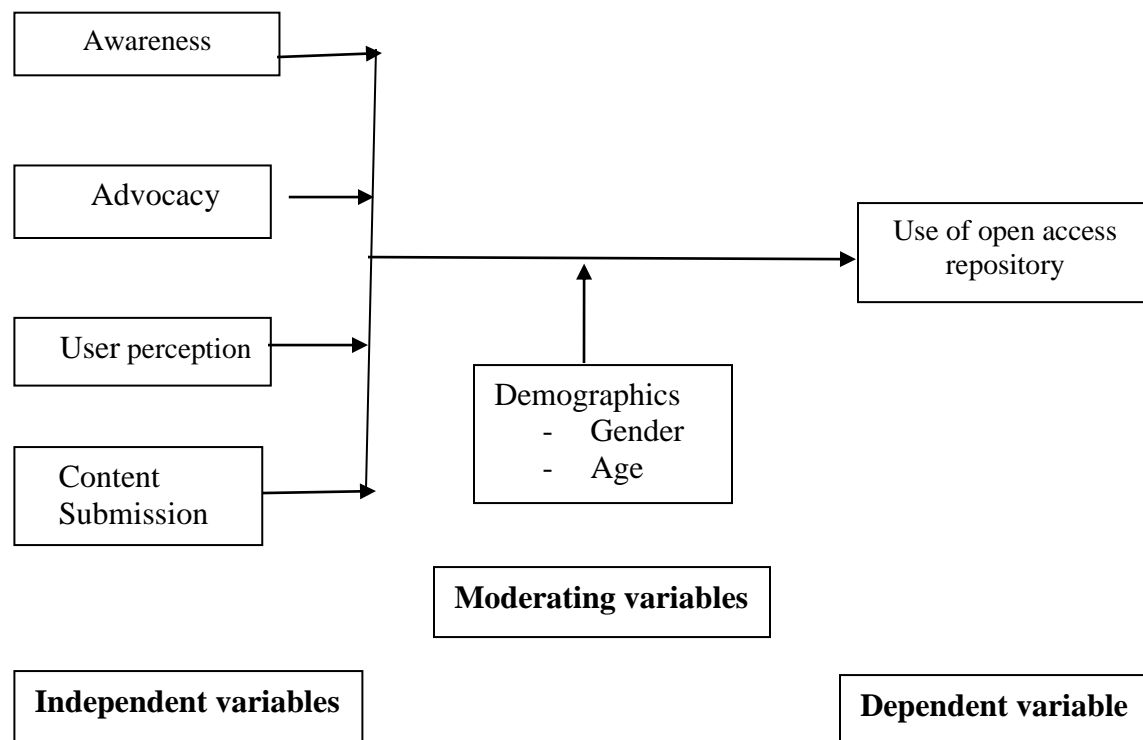
Figure 1.1: Conceptual Framework

2.3.1 Open Access Repository Concept Awareness Level

According to Social exchange theory individuals are motivated to share information with one another based on an expectation that doing so would lead to a reward. Therefore, in academic environment faculty members will be motivated to use open access repository if they are aware of the professional rewards such as research impact and citation rates. Covey (2011) found out that the significant barriers to faculty participation to Carnegie Mellon IR were lack of awareness and understanding of the functionality of the institution repository. Dutta and Dibyendu (2014), noted that Academic staff was the main source of content in their institutional repositories. However, they were of the opinion that it may not be generalized that the potential value of institutional repository is not yet fully appreciated by faculty members but it can be assumed that the lack of awareness about institutional repository and its potential, and many other related issues are the main reasons for this low participation by the academic staff.

Content flow and sustainability of any IR is dependent on the content providers' awareness and their willingness to participate (Allen 2005). Library staff should take a proactive role in creating high awareness level among their academic staff. A survey carried out among faculty members by Dutta (2014), at the University of Calcutta, revealed that 50 % of the respondent were aware of the IR however when they were further asked how they learnt about the IR most of the respondents indicated that they did not depend on the library staff, instead most of them depended on the internet.

2.3.2 Institutional Repository Advocacy by the Library Staff

In order to ensure effective use of institutional repository, advocacy and recruitment of content for institutional repository is crucial. The end users of the repository need to be enlighten on benefit of open access and self –archiving concepts. For institution repository advocacy to be achieved, Ashworth (2006), noted that Librarians need to be familiar with institution repository principles, benefits and operational processes. Their level of familiarity will enable them to act as institution repository evangelists with confidence. Ashworth further noted that there is need for librarians to develop advocacy programs, publicize institution repository by use of different strategies and promptly respond to stakeholders' questions (Ashworth, 2006).

Covey (2011), notes that to increase faculty participation, marketing and value-added services such as removing content submission barriers where librarians offer to check publisher policies, and depositing the work on behalf of the faculty member can benefit the IR. According to Ashworth (2004), continued marketing leads to continued content submission to the repository, therefore Librarians should be able to continuously train staff and students to use the IR and help them prepare their documents in acceptable format and how to submit their documents to the repository using simple interface. Cassella (2010) was of the opinion that for the success of an Institutional repository to be achieved a combination of different skills and expertise: - repository software as well as digital curation expertise, scholarly communication as well as IPR expertise, expertise on national and international. Therefore, staff training is an essential prerequisite to building a successful repository and to assessing the repository's potential for growth and development.

2.3.3 User Perception on Institutional Repository Access and Use

The increase in the number of institution repository globally is a positive indication that academic institutions have acknowledged role of the IR as an open access outlet and the institution's role in disseminating scholarship. However, Dubinsky (2014) noted that individual scholars and researchers were less enthusiastic in embracing the use of the repository. Repository administrators quickly discovered that faculty did not rush to participate in their Institutional repositories (Dubinsky, 2014).

2.3.4 Factors Deterring Content Submission by Academic and Library Staff

Several studies on self-archiving have indicated that it has been challenging and unsuccessful to persuade faculty members' archive their work in a repository. Singeh, Abrizah, and Karim (2013) sharing a Malaysian case noted that fear of plagiarism was the major barrier that inhibited authors from self-archiving in open access repositories. The authors further noted that a second salient problem was competence of the researcher, most researchers felt the process was slow and time consuming. Hence, the outcome was low faculty scholarly output in the university's institutional (Abrizah, 2009). Fortier and Laws (2014) refereeing to Cullen (2011) noted that faculty ignorance on the concept of IR, partial comprehension of the IR benefits, as well as fears over content submission negatively impact faculty contributions to the repositories.

2.4 Empirical Review of Literature

Institution of higher learning show their commitment to open access movement through effective implementation and use of institution repositories as well as regarding IR development as a strategic priority (Mamtora, Yang, & Singh, 2015). Markey, Rieh,

Jean, Kim, and Yakel, (2007) discussed various exploratory activities that institution exercised before implementation of institutional repositories such as attending institutional repository software implementation training & workshops, demonstrating operational IRs to institution's decision-makers.

Mamtora et al., (2015) study on open access publishing in the Asia and Oceania region reflected on how individual universities Institutional Repositories were growing and how each coped to meet the kind of challenges faced by its research communities. In the three universities -Charles Darwin University (CDU), University of Hong Kong (UHK) and the University of Malaya (UM), development of a good institutional repository team armed with the vital expertise and skills was key institutional repository success.

Giesecke (2011), noted that as much as faculty members would be willing to submit their work some submitted files that do not meet the quality standards, therefore librarians need to be equipped with necessary skills to help them assist the faculty members. Similar views were expressed by Bell, Foster, and Gibbons (2005), Carver (2003), Jenkins, Lyon (2003), Breakstone, and Hixson (2005), where they described how librarians need to be involved in institution repository progress, and how they ought to carry a variety of essential functions such as overcoming publisher and academic resistance, pushing for inclusion in external search services and providing good metadata standards. Anuradha, Gopakumar and Baradol (2011) examined the awareness of the availability of free open access resources through the internet. Data was collected among the students and academic staff of the BITS Pilani K.K. Birla Goa Campus, Goa. A sample of 250 respondents comprising of students and academic staff was drawn and

structured questionnaire used to collect data. The analysis of the study showed that the respondents preferred internet as the source of information. Results further revealed that the respondents were unaware of the freely available resources. In conclusion the study pointed out that there is need for librarians to carry out information literacy sessions so as to enlighten the academic community on open access resources. As a collective provision to, academic staff, librarians needs to recruit suitable information literacy programs to acquaint academic staff and researchers on the availability of open access resources. The finding from Anuradha, Gopakumar, and Baradol (2011) study are in agreement with Kuchma (2014) who insist that even for institutions where faculty have passed an OA policy themselves, it is necessary for librarians to take the initiative of gathering content for their repositories and work towards a maintainable approach by strategically targeting advocacy efforts aiming at different groups of stakeholders.

Jenkins, Breakstone and Hixson (2005), discussed how the University of Oregon created institutional repository record by group specific items in the repository as well as making contacts with scholars' bank through online catalogue in attempt to rise IR users' awareness level. They also suggested that librarians have dynamic responsibility of persuading authors to give in their scholarly work to institutional repositories, as well as in enlightening users to make effective use of the repositories and how to retrieve scholarly content from them.

Mackie (2004) described some strategies that Daedalus project at the university of Glasglow used to help populate an institutional repository included; holding meetings with faculty to discuss open access and self-archiving of publications, searching faculty

Web sites for full text articles posted on the sites, checking copyright agreements for faculty before archiving, identifying journals that allow archiving, and contacting faculty with articles in those journals for consent to post their articles (Mackie, 2004). Mackie further argued that populating a repository for published and peer-reviewed papers was slow process, and it is a task that requires a substantial input from the staff charged with development of the repository. Vishala and Bhandi (2007) were of the opinion that librarians need to proactively search for content independently as well as employ advocacy and marketing strategies to promote engagement of faculty members in institutional repository content generation. Mark and Shearer (2006) listed number of promotional activities managers can exercise such as conducting presentations to faculty committees, passing out brochures, publishing articles in the library or campus newsletters. From these studies it is concluded that there is need for IRs to have proper processes and procedures how various challenges hindering the use of the IRs. Therefore, this study is set out to explore to what extent various advocacy strategies are used by the KeMU library staff in advocating for the use of institutional repository as a tool for enhancing Open Access.

Arthur (2006a) trying to understand researcher behavior in depositing research articles in open access repositories proposed that, repository managers ought to invest in promotion and follow-up for 2-3 years after a necessary policy is distributed, after which a routine on researchers' behavior is developed. Another paper of Arthur (2006b) analyzed the impact of high-level institutional policy decisions to populate individual repositories. The paper showed that just like research article repositories, voluntary electronic thesis and dissertations deposition results in repositories had less than 12% of the available

theses, whereas when mandatory policies are well accepted deposit rates to raised towards 100%. Xia et al (2012) felt that policies alone are not sufficient for populating a repository with faculty content, but they basically yield a positive impact on the progress of repository content. However, they noted that Faculty's compliance with institution repository polices still varies broadly and policies must go along with advocacy efforts and support for researchers (Xia et al, 2012).

IRs largely depends on contributions by members of a university community, particularly faculty members for their growth. Several studies on the development of IR and the benefit of IR in promoting open access to scholarly works have found out that there is always slow response and contribution by faculty members. Campbell-Meier (2011), in a comparative study of various IRs, found out that document submission is one of the biggest challenges facing the IR developers in Canada. In a survey of directors at the Association of Research Libraries (ARL), two-thirds of the respondents noted that majority of faculty members at the institutions were not contributing (Casey, 2012). Cullen and Chawner, 2011 study on eight universities in New Zealand also reveal some reluctance on the part of faculty to contribute. Crow (2002), noted in his paper that works of faculty authors usually symbolize an institutional repository's great magnitude of intellectual output. However, crown felt that other people within the institution such as students and non-faculty researchers' works may also be highly significant and valued for the repository program, if not key to its success. Chan (2004) and Foster & Gibbons (2005) were of a different opinion and felt that although possible contributors to the IR include faculty, students and staff in universities, faculty members were considered the

key contributors of scholarly content however, they noted that it was challenging to get faculty members make their submission.

In order to investigate the factors affecting faculty contributing at the University of Rochester, Foster and Gibbons (2005) interviewed 25 professors and identified most important reasons why faculty did not submit their content were free of copyright infringement and disciplinary work practices such as co-authoring or versioning. These challenges led the Faculty members to develop their own ways of creating and organizing documents. With the introduction of institutional repositories faculty members perceived metadata creation for contributed objects as additional work. Foster and gibbons did not recommend solutions to be adopted so as to overcome the challenges that the faculty faced. Shearer (2003) conducted a survey to determine CARL institutional repositories content contribution and use. Shearer argued that the success of an institutional repository should be determined by its use, and one of the measures of usefulness is contribution of content. Shearer concluded that to eventually determine success of IR, it uptake and use by researchers is crucial. Abrizah, and Karim (2013) sharing a Malaysian case noted that fear of plagiarism was the major barrier that inhibited authors from self-archiving in open access repositories. The authors further stated that a second noticeable problem was competence of the researcher, most researchers felt the process was slow and time consuming. Hence, the outcome was low faculty scholarly output in the university's institutional (Abrizah, 2009). Evaluating the reasons for non-participation to Cornell University`s institutional repository Davis and Connolly (2007) interviewed eleven researchers from the faculty of sciences, social sciences and humanities and found that majority of the faculty members had posted their

work in their personal webpage and disciplinary repositories which were believed to have a more significant representation in the global community than one`s affiliate institution. The reasons raised for non-use of the digital repositories included; copyright concerns, fear of plagiarism and having their work scooped, learning curve, fear that posting pre-print can jeopardize one's publication success, associating their work with inconsistent quality, reluctance of depositing work which has not been peer reviewed, others respondents indicated they saw use of Cornell Dspace as duplicate of efforts since it serves the same purpose with the subject repositories they are already using (Davis and Connolly, 2007). From the eleven faculty members interviewed, four were aware of Cornell`s repository however only one had deposited items in the repository. In their conclusion Davis and Connolly claimed that the issue of scholarly communication crisis which hinders access to research works is not necessary to faculty, however disciplinary norms and reward system influence different perception the faculty members are having with regard to the functions, risks, and benefits associated with using digital repositories. The authors called for institutional repository managers to have a discourse on the cultural diversity within the faculty members in order to serve their needs. Cullen and Chawner, (2011) in their papers on self-archiving noted that, lack of awareness and understanding of the Carnegie Mellon university institutional repository and the functionality of the software were major hindrances to faculty participation in institutional repositories. In the effort to establish challenges academic staff faced with regard use of to open access outlets for disseminating research findings, Mutwiri (2014) conducted a study in 12 private and 7 public universities in Kenya where a sample of 381 respondents were selected. The study established that academics preferred

traditional publishing outlets for dissemination of scholarly work as opposed to open access outlets among Kenyan scholars, however majority of the academic staff indicated to be active consumers of Open Access work, but not dynamic contributor to them. Specifically, (74.3%) of the respondents were reported to be active consumers of works deposited in the institution repository, but only 20.9% had deposited their work in the repositories. Challenges highlighted for failure to deposit work in the repository included; failure of the librarians to partner with academics in the development of IRs on the basis of sensitivity to their perceptions of African dignity, most repositories were perceived to be in their youthful stage of development. unawareness among academic staff on the existence of institutional repositories as well as inadequate skills in their use due to limited training opportunities, inadequate promotion of IRs by library staff and weak partnerships with academic staff, concerns about copyrights issues, cost of publishing, and failure to appreciate the benefit OAP were raised challenges faced by the academic in regard to open access outlets (Mutwiri, 2014).

2.5 Critique of Existing Literature

The existing literature holds inconsistent findings about the effect of obligations of faculty on IR content submission and OA policies. Crow (2002) noted that works of faculty authors usually symbolize an institutional repository's great magnitude of intellectual output. However, other people within the institution such as students and non-faculty researchers' works may also be highly significant and valued for the repository program, if not key to its success. Chan (2004) and Foster & Gibbons (2005) were of a different opinion that although possible contributors to the IR include faculty,

students and staff in universities, faculty members were considered the key contributors of scholarly content. Arthur (2006b) analyzed the impact of high-level institutional policy decisions to populate individual repositories and concluded that deposition of content to the IR was left open for the volunteers' deposition results were low whereas when mandatory policies are well accepted deposit rates raised. Jain (2009) had a different opinion that IR will only function fully when a policy to populate it is in place, however, Jain felt that researchers can react negatively to any suggestion of compulsory. Lynch (2003) agrees with Jain on compulsory submission policy and cautioned that institution repository should not be used as a tool for implementing organizational control over academic work submission.

 Xia et al, (2012) and Kuchma (2014) intuited that policies alone are not sufficient for populating a repository with faculty content, but they basically yield a positive impact on the progress of repository content. However, Xia et al (2012) noted that Faculty's compliance with institution repository polices still varies broadly and policies must go along with advocacy efforts and support for researchers while Kuchma (2014) admitted that even where faculty have passed an OA policy themselves, it is necessary for librarians to take a proactive role in garnering content for their repositories and work towards a sustainable approach by strategically targeting advocacy efforts aiming at different groups of stakeholders. Kuchma thoughts' concurred with Xia et al. (2012) and Arthur (2006a) where both authors agreed that passing a policy does not, on its own, change faculty attitudes regarding OA or deposit practices and policies must still be accompanied by advocacy efforts and support for researchers to deposit. Jain and Xia

differ in opinion whether the growth of IR depend on the implementation of the policy or not.

From the literature reviewed students and faculty members were key respondents, studies that used library and repository managers were few. The research approaches used in the studies reviewed was qualitative while different sampling techniques, sample size and data collection methods differed from one study to another.

2.6 Research Gaps

From the literature reviewed most of the studies have stated the challenges that institutions are facing in development of IR. A few studies reflected on how individual universities IR were growing and how each handled the challenges that its researchers faced. Most of the studies were from developed countries to be specific Asia and Oceania region. In developing countries such as Kenya very few studies have been carried out hence, it necessities why this research was carried out to fill the knowledge gap here in Kenya. Most of the studies were also case studies focusing on development and establishment of new IR however this study was more specific on the factors that influenced the use of KeMU institutional repository as a tool for enhancing open access.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

Chapter three outlines the research design, target population of the study as well as the sampling methods which includes determination of the sample, data collection methods, and methods of testing reliability of the questionnaire. Further the chapter discusses the data collection methods and defines the variables being investigated. Methods used in analyzing the data and a summary of the chapter are also provided at the conclusion of the chapter.

3.2 Research Design

Punch (2009) defines research design as a description of the strategy and framework from whom and how data is collected and analyzed. Kothari (2004) and Kumar (2011) concur with Punch (2009) by describing research design as a structure of investigating, procedural or a blue print for gathering, measuring and analyzing data, and facilitating the flow of research operation.

There three commonly used research approaches when carrying out a study, namely: qualitative quantitative and mixed methods. According to Creswell (2009) the preference of a research approach mainly depends on a research problem, kind of data collected paradigm chosen and the research design to be used. A quantitative research design was adopted for this study. Bryman and Bell (2011) discusses a quantitative research method as a way of testing presumption by examining the association among variables. They

further explained that the quantitative approach uses a systematic approach where numerical data and measurement are utilized to obtain information on phenomenon under study. According to cooper and Schindler (2008), the how, when and who research questions are largely answered through quantitative research design. It usually builds and tests theories. The design was found suitable for this study since the researcher's intension was to find out how the five characteristics of innovation in the Rogers theory influence utilization of an institutional repository as a tool for enhancement to open access for scholarly work at KeMU and how the four major motivation factors for social exchange could be hindering the use of the institutional repository at KeMU

3.3 Target Population

A population is a group of individuals, events or objects with a common observable characteristic (Mugenda, 2003). The study focused on all library and academic staff of Kenya Methodist University main campus. The target population comprised of 120 academic staff and 10 library staff.

Table 3.1: Target Population

Category of Target population	Target population
Academic staff	120
Library staff	10
Total	**130**

3.4 Sampling Technique

The process a researcher uses to collect people, places or things to study is referred to as sampling. The sampling process involves selection of a number of objects or individuals from the target population in a way that the group that is picked contains elements that represent the characteristics existing in the whole group (Orodho & Kombo 2002). Sampling entails the process of selecting some elements of the population that are used to provide data used in drawing conclusions on the whole population (Cooper & Schindler 2008). This study used the probability sampling methods.

The probability sampling technique refers to whereby a controlled and random process is used to ensure that each member of the population is given a known chance of being selected (Cooper & Schindler 2008). Ritchie and Lewis (2012), states that probability sampling draws participants randomly from a wider population and has high representation. According to Cohen, Manion and Morrisson (2011) the probability sampling technique has less risk of bias and allow two-tailed tests in statistical analysis of quantitative data. Examples of probability sampling technique are simple random, systematic and cluster. For the purpose of this study Simple random sampling method was used to draw a sample of the respondent from the academic and the library staff of KeMU.

3.5 Sample Size

The total population of the study constitutes 130 respondents. A sample of 98 respondents was drawn. The sample unites were determined by a simple formula used in

calculating sample size for proportions provided by Yamane (1967). The sample calculated was also found to be in agreement with the Krejcie and Morgan (1970) tables for sample calculation.

Yamane (1967) sample size calculation formula

$$\mathbf{n = N \div [1+ N\ (e^2)]}$$

Where **n**= minimal desired sample size

   N=the target population (130)

   e =degree of precision=0.05

   Therefore, by substitution:

      $\mathbf{n}=130 \div [1+ 130(0.05^{2)}]$

      $\mathbf{n}= 97.7$ $n \approx 98$

To calculate cluster sample

$$\mathbf{N_{p1}\ = n \div N \times N_e}$$

Where
$\mathbf{N_{p1}}$ = cluster sample for academic staff $\mathbf{N_{P2}}$ = Cluster sample for library staff
n = total sample size (98)   **n**= total sample size calculated (98)
N = total target population (130)   **N**= Total target population (130)
$\mathbf{N_e}$ = cluster population for academic staff (120) $\mathbf{N_e}$= cluster population for library staff

Therefore, by substitution:

   $\mathbf{N_{p1}} = (98 \div 130) * 120$ $\mathbf{N_{P2}} = (98 \div 130) * 10$

   $\mathbf{N_{p1}} = 0.75 * 120$ $\mathbf{N_{P2}} = 0.75 * 10$

   $\mathbf{N_{p1}} = 90$ $\mathbf{N_{p2}} = 7.5$ $\mathbf{N_{P2}} \approx 8$

Table 3.2: Total sample population

Category of Target population	Target population	Sample Size
Academic staff	120	90
Library staff	10	8
Total	**130**	**98**

Source: Researcher (2016)

3.6 Data Collection Methods

Saunders et al. (2013), argues that the use of questionnaire as a data collection method is the most efficient and efficient way of collecting responses from a huge sample for analysis. A questionnaire composed of close-ended questions was used as the instrument for data collection for the purpose of this study due to its cost effectiveness. This mode of data collection was also preferred since it made data collection and analysis simpler. The high literacy rate among the selected respondents helps in reducing biasness because when the same question is presented to the respondents, there is no middle-man bias involved. Finally, another benefit for using the questionnaire was that the respondent's answers to the questions are not in any way influenced by the researcher's individual opinion. The questionnaire was divided into five sections. The first section of the questionnaire was an introduction to the survey which explained the purpose of the questionnaire stating clearly that data to be obtained was purely for academic purpose. This section elicited the demographic information of the respondents

as well. The other sections of the questionnaire contained questions generated from the objectives of the study as indicated in Table 3.1.

Table 3.3: Summary of the questionnaire

Objective	Section in Questionnaire	Page
1. Examine the level of awareness of IR and OA among the academic staff at KeMU.	- Familiar with terms and concept	69
	- Views on various OA and IR concept	70
	- Awareness level on IR benefits	70
2. Assess the extent to which the library staff promotes the use of IR as a tool for enhancing OA of scholarly work at KeMU.	- Awareness of advocacy program	70
	- IR advocacy strategies at KeMU	71
	- effectiveness of IR advocacy at KeMU	71
	- IR aspects that require more advocacy/training	71
3. Explore how the perception of users on open access publications influenced use of KeMU repository.	- Aspects relating to IR content	72
4. Examine factors deterring content submission by academic and the library staff to KeMU repository	- Rate of institutional repository content submission	72
	- Factors that led to failure to submit content to IR	72

3.7 Data Collection Procedure

The research commenced with a visit to the National Commission for Science, Technology and Innovation (NACOSTI) and obtained a research permit. Further permission was sought from Kenya Methodist University management. The researcher then personally administered and collected the questionnaires from the library and academic staff.

3.8 Reliability

Joppe (2000) defines reliability as the magnitude in which the outcome of research is constant over time and projects a precise image of the total population under study. Joppe also argues that the research instrument can be declared reliable if the results of a study can be reproduced under a similar methodology. Bryman (2012) and Cohen, Manion and Morrison (2011) gives various forms of reliability that can be used in research include inter-rater, test-retest, stability reliability, equivalent forms and internal consistency.

In this study the reliability of the instrument of data collection was measured using the internal consistency. According to Gichohi (2016), internal consistency is the level in which all of the items in one study instrument yield results that are alike. The reliability of the data collection instrument was tested by administering a questionnaire for the study to all the respondents' categories. Statistical Package for Social Science (SPSS) version 20 software was used to determine the reliability of the questionnaire using Cronbach's alpha. The internal consistency or association of items in a survey instrument is determined using Cronbach's alpha to gauge its reliability. Frankell and

Wallen (2000) stated that items are considered reliable if they yield a reliability coefficient of 0.7 and above. The Cronbach alpha for the four independent variables in this study registered a coefficient value greater than 0.7 as indicated in Table 3.4.

Table 3.4: Reliability estimates of questionnaire instrument

Variable	Number of items	Cronbach's alpha
Open Access repository concept Awareness level	3	0.732
Role of library staff in advocating for IR use	3	0.741
User perception on open access publications	2	0.894
Factors deterring content submission	3	0.723
Total	11	3.09

3.9 Validity

According to Kombo and Tromp (2006), validity of a research instrument will be determined by its ability to provide the researcher with accurate, meaningful and sound data to enable the researcher fully meet his or her research objectives and the extent to which the instrument will produce truthful results as per the research objectives.

Cooper and Schindler (2011), states that a pilot study is aimed at ensuring validity and reliability of the data collection instruments to obtain high-quality data. To establish the validity of the research instrument in this study, a pre-test of the instrument was done in a pilot study conducted at Kenya Methodist University Nairobi campus.

According to Baker (1994) a reasonable number to consider for a pilot study is sample of 10-20 percent of the actual study sample size. Bakers' suggestion is in agreement with Connelly (2008), who advocates for at least 10% of the sample projected for the larger parent study should be considered in the pilot study sample. Based on this, the pilot survey had an overall sample size of 20 respondents (15 academic staff and 5 library staff). This pilot sample size was valid because the sample size for the study population was substantially large. The response rate for the academic staff was 70 % (11 academic staff completely filled and returned their questionnaires) and 100% for the library staff.

Results analyzed from data obtained in the pilot study were used to test whether the design of questions was logical, if the questionnaire items were simple and well understood, whether the responses given were comprehensive and the time taken to complete the survey. The results obtained from the pilot study also enabled the researcher to affirm whether the variables in the questionnaires could be processed and analyzed with ease. Questions which were found to be interpreted differently during the pilot study were rephrased so that they could have the similar meaning to all respondents. The respondent's views given during pre-testing were summarized and considered in improving the questionnaires before actual data collection.

3.10 Data Analysis

Schindler and Cooper (2008) states that the process that involves reducing the collected data to a convenient size, developing summaries, looking for patters and applying statistical techniques that help to interpret the meaning is known as data analysis. The quantitative data collected in this study was analyzed using a statistical package for

social science (SPSS) version 20. The questionnaire was first coded in the SPSS database. The coded data was then analyzed using descriptive statistics and was presented in terms of frequencies and percentages in contingency tables and figures and in other cases descriptive and narrative statements were used. The analysis and interpretation of data was done addressing the purpose of the study.

3.11 Ethical Considerations

The researcher sought permission from NACOSTI and letters from the authorities was appended to the questionnaire before data collection for clarity and assurance to the respondents that the study was conducted purely for academic purposes. The researcher objectively identified and select respondents as the subject to provide information for this study and before presenting the questionnaire she obtained consent of the respondent. Moreover, the researcher ensured that the confidentiality of the respondent was guaranteed and protected through non-disclosure of the respondent's name on the questionnaires and treating the information given by the respondent with utmost confidentiality. The convenience of the respondents was upheld to ensure that the exercise do not in any way interrupt the working schedules of the respondents unnecessarily.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

Chapter four highlights the findings of the study on the factors influencing the use of KeMU institutional repository as a tool for enhancing open access. The basis of this study were subject to the following objectives, (1) To examine how the level of awareness of open access concept and institutional repository influenced the use of KeMU repository, (2) assess the extent to which library staff advocate the use of IR as a tool for enhancing open access of scholarly work at KeMU, (3) explore how the perception of users on open access publications influenced use of KeMU repository , and (4) examine factors deterring content submission by academic and the library staff to KeMU repository. Towards the achievement of these, the chapter presents response rate, demographic information, the quantitative findings, and discussion of the research findings.

4.2 Response rate

The study targeted academic and library staff from KeMU main campus, of whom 82 out of the sampled 98 completed and submitted the questionnaires back, therefore totaling to 84 percent of the response rate. A 50 percent response rate of is said to be adequate for analysis and reporting Mugenda (2003). The author adds further that a response rate of 60 percent is good while the response rate of 70 percent and above is

very good. Baruch and Holton (2008) opinion on response rate concurs with Mugenda's whereby they suggest that 50 percent is the minimal level for response rate. Therefore, from the suggestion by different scholars as highlighted, response rate of this study was found to be good enough for analysis since it is above 80 percent.

4.2.1. Demographic data

The respondents were asked a series of questions to inform the background information about the respondents. This included the gender, age, work experience and whether they had authored any articles. This was to assist the study in understanding and providing a basis under which the study can fairly produce relevant information.

Table 4.1: Demographic analysis of the respondents

Characteristic	Sub-set	Frequency	percentage
Gender	Male	42	51
	Female	40	49
Age	20-30	9	11
	31-40	37	45
	41-50	30	37
	51-60	4	5
	61-70	2	2
Work Experience	0-3	12	15
	4-6	10	12
	7-9	48	59
	Above 10	12	15
Authored any article	Yes	58	71
	No	24	29

The findings reveal a majority of the sampled staff (51 percent) was male and 49 percent were female. This indicates that gender of the respondents was almost evenly distributed. Almost half (45 percent) of the respondents are of age bracket 31-40 years, with majority (59 percent) having been working for 7-9 years in their respective professions. This means that most of the respondent were young and in the career development stage in life. The work experience of the sampled respondents implies that well informed and experienced to give valid responses in regard to the study.

4.2.2. Respondents who had authored research articles

The results expressed that more than half (71 percent) of the sampled respondents have authored at least one research article. Few of these articles (5 percent) have been published in top peer reviewed journals while most of them (33 percent) have been published in credible/reputable publishers while 27 percent had published in Institution repositories. This indicates that most of the respondent were scholars had engaged in research had at least a scholarly article that they would submit to KeMU repository.

Table 4.2: Distribution of place of publication

Place	Frequency	Percent
Top peer journals	4	5
Credible/reputable publishers	27	33
Non-peer reviewed journals	5	6
Institutional repositories	22	27

From the distribution of place of publication illustrated in Table 4.2 it can be deduced that though the idea of submitting research works in an institutional repository was embraced, most of the respondents preferred publishing their work with credible and reputable journals.

4.3 Research objectives data analysis

This section outlines the research findings through descriptive statistics. The section specifically explains the findings of each objective which include; to examine to what extent do the level of awareness of open access concept and institutional repository influence use of KeMU repository, assess the extent to which library staff advocate the use of IR as a tool for enhancing open access of scholarly work at KeMU, explore how the perception of users on open access publications influenced use of KeMU repository , and to examine factors deterring content submission by academic and the library staff to KeMU.

4.3.1 Objective 1: Open Access concept and Institutional repository awareness level

In examining the open access concept and institutional repository awareness among academic and library staff, three questions were asked. In the first question, the respondents were asked whether they were familiar with the terms institutional repository and open access. Findings reviewed that institutional repositories and open access are terms that were familiar to both academic and library staff as illustrated on Figure 4.1.

level of Familiality with the terms

	Institutional repository	Open Access
■ Yes	94	90
■ No	6	10
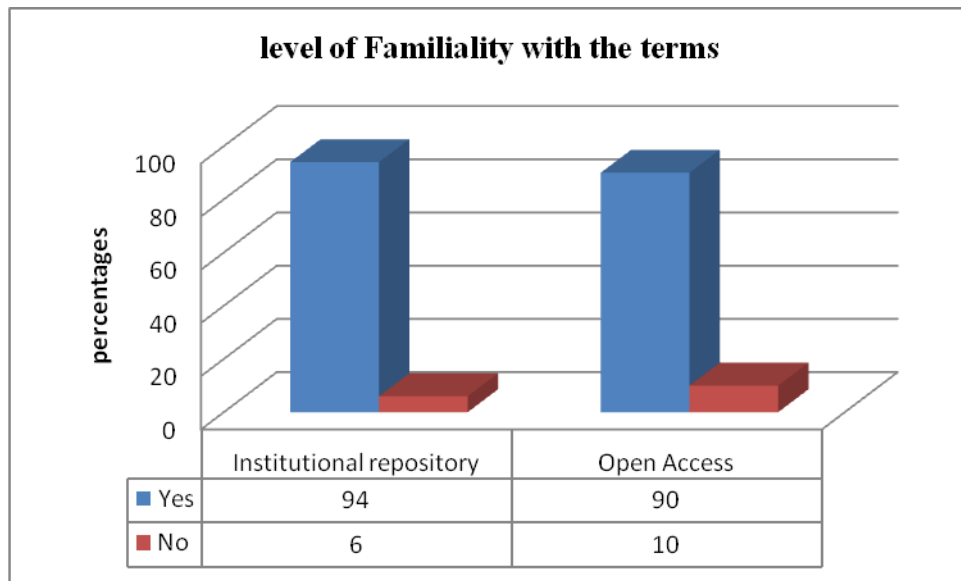
Figure 4.1: Level of familiarity with institutional repository and open access terms

A follow up question was asked on institution repository concept awareness and use of KeMU repository. A five item likert scale, which was assigned codes of 1 to 5 where 5 = Strongly Agree (SA), 4 = Agree (A), 3 = Neutral (N), 2 = Disagree (D), and 1= Strongly Disagree (SD) was used. Findings revealed that although the terms are said to be familiar, only 37 percent of the respondents agreed to be aware of the institutional repositories and open access concept as indicated in Table 4.3. This implies that the institutional Repository concept at KeMU is not well understood, therefore posing a challenge in the acceptance of KeMU repository as an avenue for enhancing open access of scholarly work. Similar findings were found at the University of Carlifonia where a large number of faculty members were reported not to know much about the IR hence resulting to low content submission to the university repository.

Table 4.3: Level of open access and institutional repository concepts awareness

	SA	A	N	D	SD
	%	%	%	%	%
I am aware of institutional repositories and open access concept	17	20	10	25	16
I am aware of the existence of KeMU institutional repository	9	25	10	37	19
I have used KeMU institution repository to access scholarly work from colleagues	5	10	20	35	30
I have used other institutions' Institutional Repository to access scholarly work	21	16	15	30	20

On the third question of assessing the awareness level of benefits of open access and benefit of having their research work deposited in an institution repository, respondents were required to rate on a three item Likert scale their level of awareness on the benefit of an institution repository. An illustration from Table 4.4 indicates most of the respondents were not aware of the benefits of an institution repository. Social exchange theory proposes that information and knowledge would be shared by individuals based on the reward they expect in sharing the information. Therefore, in academic environment faculty members will be motivated to participate in repository content submission if they are aware of the professional rewards such as research impact and citation rates. Low awareness levels of various institutional repository concept and

benefits of depositing research works in an institution repository is a factor that is the use of KeMU repository as an open access tool.

Table 4.4: Benefits of an institutional repository

	Very Aware %	**Less Aware %**	**Not Aware %**
Institutional repositories enables visibility and accessibility of research outputs of an institution	14	8	78
Through Institutional repository the intellectual output and memory of an institution is preserved.	4	13	83
Open access enables the visibility of researchers, scholars and the academic community	4	24	72
Through Open access there is great citation of a Researcher's work	4	14	82
Open Access improves the rating of research institutions internationally	6	20	74

4.3.2 Objective 2: Institutional repository advocacy by library staff

Three questions were asked regarding institutional repository advocacy to assess the extent to which library staff advocate for the use of IR as a tool for enhancing open access of scholarly work at KeMU. The first question was on whether the respondents

were aware of any advocacy program in KeMU. Results indicate more than half of the respondents (60 percent) were not aware of the availability of IR advocacy program in the institution as shown in Figure 4.2. This high number of respondents not being aware of the advocacy program implies that the KeMU advocacy program was not effective in creating awareness of the institutional repository. It can also be deduced that the library staff are not enthusiastic in advocating for the institutional repository. This is in contrast with Ashworth 2006 who was of the opinion that Librarians have to be aware of an institution's repository, its ideology, importance as well as its operational processes so as to promote the use of the repository and act as 'IR evangelists'. Jain, Bentley, and Oladiran, (2009) stated that it is the role of librarians to come up with advocacy programs, publicize the institution's repository through institutional news media and respond to any inquiries posed by the stakeholders. The low level of awareness of the advocacy program by the academic staff may be presumed to be one of the prime causes of less usage of KeMU repository by academic staff.
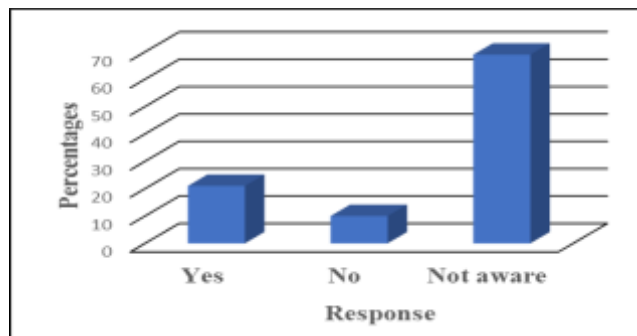

Figure 4.2: Level of awareness of KeMU advocacy program

For institutional repository to achieve its intended purpose there is need for frequent publicity and promotion for repositories. Mark and Shearer (2006) states that different promotional strategies can be exercised such as passing of promotional materials,

making presentations to faculty committees and publishing articles in either the library or university newsletters to advocate for IR use. To measure the use of different advocacy strategies to advocate for use and content submission to the KeMU repository, a second question was asked. Respondents were required to rate on a five item likert scale how different advocacy strategies were used by library staff. Most (84 percent) of the respondents agreed that face to face strategy was the most common strategy used by the library staff for advocacy as illustrated in Table 4.5. Other advocacy strategies such as social media, banners, posters& leaflets, institution website, emails, seminars and workshop were found to be less used where most of the strategies were rated below 50% as shown in table 4.5. From the findings it may be deduced that the over using of only one advocacy strategies may have led to low awareness level KeMU repository.

Table 4.5: Institutional repository publicity strategies used by KeMU library staff

Strategy	SA	A	N	D	SD
	%	%	%	%	%
Social media	11	18	15	20	37
Institutional website	15	22	5	37	25
Face to Face	29	55	2	4	10
Seminars and Workshops	20	23	5	28	24
Emails	11	17	12	29	31
Banners, Posters & Leaflets	19	27	13	20	21

On the third question of this objective, respondents were asked whether the advocacy programme had been effective in advocating for used of KeMU repository. In addition, a question to probe sensitization aspects respondents needed was asked. Findings indicated that most (70 percent) of the respondents suggested they needed more sensitization on

copyright issues as indicated in Figure 4.3. Respondent also indicated the need of being informed more on the functions and benefits of posting their research works in an institution repository
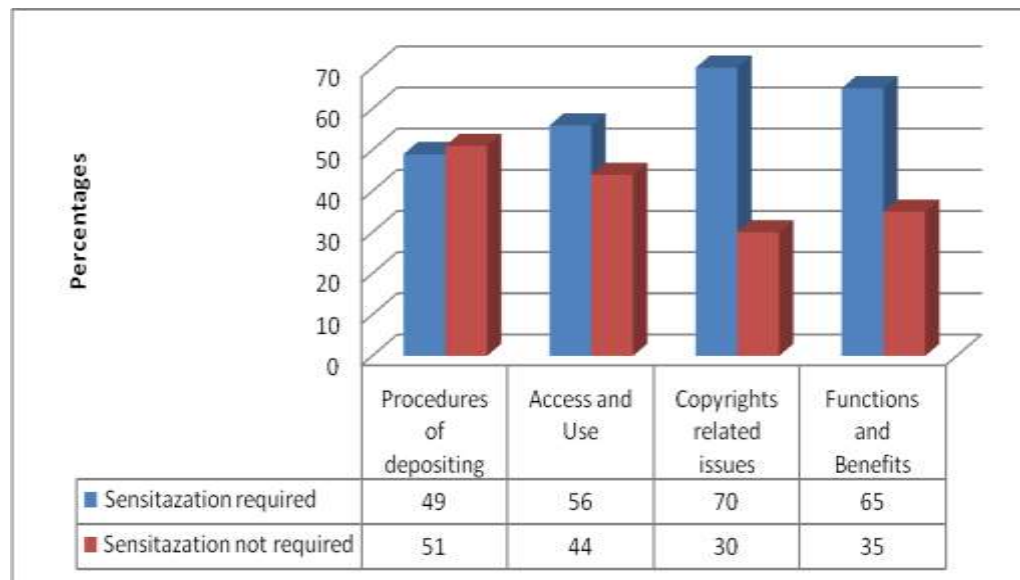
Figure 4.3: Aspects sensitization is required on

4.3.3 Objective 3: User perception on open access publication and it influence on the use of KeMU repository

This objective sought to explore how the perception of users on open access publication influenced the use of KeMU repository. To measure this objective, the Respondents were required to rate on a five item Likert scale their level of agreement with various aspects relating to institutional repository publications.

Results from table 4.6 indicate that the respondent posed a negative attitude toward the institution repository content. These findings concurrent with one characteristic of the Rogers's innovation diffusion theory that states that if an innovation is perceived to be

easy to understand and use as well as advantageous than the procedures it surpasses; therefore, it is more likely to be adopted. The negative perception of KeMU academic staff on IR content as influenced the submission of content to the repository hence the slow growth of the repository.

Table 4.6: Levels of agreement with aspect relating to repository content

	SA	A	N	D	SD
	%	%	%	%	%
Content deposited in an Institutional Repository can be accessed by anybody without any restrictions	40	17	17	21	05
Repository content should be peer reviewed	12	15	16	32	24
content submitted in the Institutional Repository is of low quality	29	40	28	2	1
Items in the Institutional Repository are cited more often than article available only in subscribed journals	15	10	36	25	14

4.3.4 Objective 4: Factors deterring content submission by academic and library staff to the KeMU Institutional repository

This objective sought to examine some of the factors that were hindering the academic and library staff from submitting their scholarly content to KeMU repository. To measure this objective two questions were asked. Firstly, the respondents were asked whether they had submitted their research work in any repository. The respondents who

had submitted their research work in the repository were asked to rate how easy the process of submission was, while those who had not submitted their research work were asked to rate on a five item Likert scale the reason as to why they had not submitted. Findings showed that 44 percent found the uploading process to be very easy as illustrated in Figure 4.4.
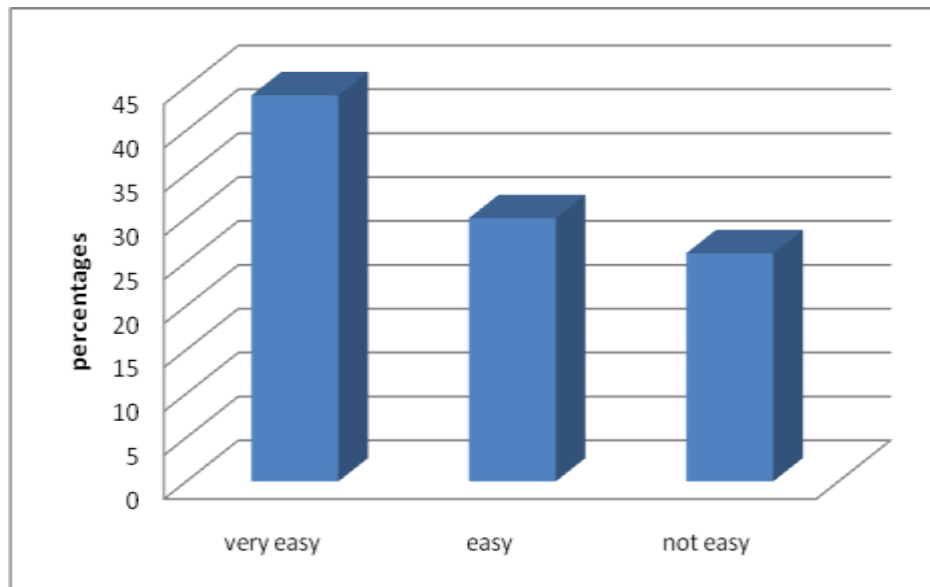
Figure 4.4: User perceptions on IR content submission process

Results further revealed that several factors were identified as hindrances to why respondent had not submitted their scholarly work to KeMU repository. As shown in table 4.7 most respondents (45%) and (42%) identified risk to plagiarism and lack of awareness of open access and IR benefits as major contributing factor that deter them from submitting their publications to the repository respectively. Inadequate skills to publish (31%) and the general perception that content in institutional repositories are of

low quality (30%) were also pointed out as causes of to submit research article to KeMU IR:

Table 4.7: Cause of failure to use and submit research articles to KeMU IR

Reasons of Failure to Publish	Greater	Moderate	Minimum	Low
	%	%	%	%
Lack of awareness on open access and institution repository benefit	42	23	12	23
Lack of adequate skills to publish in the Institution Repository	31	20	28	21
Content in the Institutional Repository is of low quality	30	35	12	19
Content in the institutional repository is likely to be plagiarized	45	30	7	18

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMENDATIONS

5.1 Introduction

The main objective of the study was to investigate factors influencing the use of KeMU institutional repository as a tool for enhancing open access. The specific objectives of the study were to: examine the level of awareness of open access concept and institutional repository influenced the use of KeMU repository, assess the extent to which library staff advocate the use of IR as a tool for enhancing open access of scholarly work at KeMU, explore how the perception of users on open access publications influenced use of KeMU repository, and to examine factors deterring content submission by academic and the library staff to KeMU repository. Chapter five give a summary of the study, conclusion and recommendations on the basis of results attained from the objectives the study. Firstly, a summary of the findings as per the objectives is discussed; secondly conclusion of the study given, thirdly recommendation of the study presented and finally suggestion for further study given.

5.2 Summary of findings

This section is sub-divided based on the objective of the study so as to enable an understanding of each objective and its findings.

5.2.1 Level of awareness of Open Access concept and Institutional Repository among the academic staff

The study found out that Institutional Repositories and Open Access terms were familiar to most of the academic and library staff; however, when a question was asked on awareness of institutional repository functions and benefits, a number of them were not aware. The study also revealed that most of the academic staff and library staff were not sentient of the existence of KeMU IR. The output of the study accorded Connolly and Davis (2007) study that assessed the reasons for not using the Cornell university repository, found out that lack of awareness of the repository was one of the identified reasons as to why faculty members were not active in publishing their work in the institution's repository. From the finding of the first objective Low awareness levels of various institutional repository concept and benefits of depositing research works in an institution repository can be recognized as factors that influence the use of KeMU repository as an open access tool.

5.2.2 Institutional repository advocacy by library staff

The study assessed use of various IR advocacy strategies by the library staff. The study finding indicates that more than half of the respondents were not aware of the availability of IR advocacy program in the institution. Face to face advocacy strategy was the major methods used for advocacy. Other advocacy strategies used by the librarians though not often were social networks, emails banners, posters& leaflets, institution website, seminars and workshop. The high number of respondents not being aware of the advocacy program implies that the KeMU advocacy program might not be effective in creating awareness of the institutional repository. It can also be deduced that

the library staff are not enthusiastic in advocating for the institutional repository. This is in contrast with Ashworth 2006 who was of the opinion that Librarians have to be aware of an institution's repository, its ideology, importance as well as its operational processes so as to promote the use of the repository and act as 'IR evangelists'. The less use of various advocacy strategies by the KeMU library staff is in contrast with Ezema and Victoria (2015) who noted it is critical for librarians to use different advocacy methods to reach out to patrons to ensure effect use of the repository. Most of the respondents suggested they needed more sensitization on copyright issues, functions and benefits of posting their research works in an institution repository.

5.2.3 Perception of users on open access publication and it influence on the use of KeMU repository

This objective sought to explore how the perception of users on open access publication influenced their use of KeMU repository. Findings indicate that the respondent posed a negative attitude toward open access publications These findings concurrent with one characteristic of the Rogers's innovation diffusion theory that states that if an innovation is perceived to be easy to understand and use as well as advantageous than the procedures it surpasses; therefore, it is more likely to be adopted. The negative perception on open access content by KeMU academic staff as influenced the use of KeMU repository as a tool for enhancing open access of scholarly work.

5.2.4 Factors deterring content submission by academic and library staff to the KeMU Institutional repository

The study revealed that Fear of plagiarism was also highlighted as the most hindering factor to institution repository content submission among the academic staff. Other factors highlighted were; low awareness level on open access and IR benefits, inadequate skills to publish, unfamiliarity with content submission process and the general perception that content in institutional repositories are of low quality. These findings are in concurrent with the Social exchange theory that states, individuals engage in sharing of knowledge for four reasons: the expected mutual benefit, probable gains in reputation, insight of self-worth and direct reward to social or financial gains; therefore, when most of the respondents affirm not to be sentient with the benefit of having their work in the open access repository they will tend to be cautious when sharing their work. It is therefore very important to confront and address these challenge so as to promote the adoption of open access repository at KeMU.

5.3 Conclusion

Low awareness levels of the existence of KeMU repository, institutional repository concept and of the benefits of depositing research works in an institution repository can be recognized as factors that influence the use of KeMU repository as an open access tool. The high number of respondents not being aware of the advocacy program implies that the KeMU advocacy program is not effective in creating awareness of the institutional repository. It can also be deduced that the library staff are not enthusiastic in advocating for the institutional repository.

Secondly, Failure to effectively use different advocacy strategies may have led to the slow growth of KeMU repository. There is also a negative perception among the academic staff on open access publication. The negative perception on open access content by KeMU academic staff as influenced the use of KeMU repository as a tool for enhancing open access of scholarly work.

Finally, fear of plagiarism, low awareness level on open access and IR benefits, inadequate skills to publish, unfamiliarity with content submission process and the general perception that content in institutional repositories are of low quality were also highlighted as factors deterring academic staff from using the repository as a tool for enhancing open access. Sensitization on copyright issues, functions, use and benefits of having research works in an institution repository is necessary.

5.4 Recommendations

On the basis of the summary, discussion and conclusions presented in chapter five of this study, the researcher makes the following recommendations.

5.4.1 Recommendation to library staff

The study recommends the need for massive awareness campaigns on the function and benefits of IR among the academic staff to increase content submission. There is a need have a well laid out advocacy program incorporating use various advocacy methods such as social media, email and print media by the library staff so as to reach out too many and persuade more academic staff to be vibrant in institutional repository content submission.

Library staff need to be vigilant know all the conferences, symposia, public lectures and workshops happening in the institution and make an effort to capture all research outputs presented for archiving in the repository.

Library ought to come up with institutional repository activities at departmental levels that advocate for the use of the repository to their colleagues by sharing with them the importance of having their work in the repository.

5.4.2 Recommendation for library management

For growth of institutional repository to be achieved there is need for support from the management. This study therefore recommends senior library managers to play their leadership role in setting up of the institutional repository polices, ensuring the implementation of the laid institutional repository policies.

Except when the university management buys into the idea of OA, the library can do very little; therefore, this study recommends that the library management need to engage with the top management and show them the subsequent benefits of embracing OA publishing through the repository and persuade them on the need for having the relevant policies repository approved

Library with the help of research and postgraduate office have to come up with policies that requires every postgraduate student at KeMU submit their soft copy of their theses and dissertations before they are cleared with the library for graduation.

5.5 Suggestions for further study

This study was investigating factors influencing the use of KeMU institutional repository as a tool for enhancing open access. The study identified a gap on the use of various

advocacy strategies and therefore suggests a further study on the effectiveness of various advocacy strategies be carried out. This suggestion is based on low level of institutional repository awareness due to uneven use of different advocacy methods.

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LIST OF APPENDICES

Appendix i: Questionnaire

Dear respondent,

I am a master's student in the department of information science at Kenya Methodist University and am conducting a research on "*factors influencing use of open access repository: a case for Kenya Methodist University*.

I am requesting your participation in my study by answering the attached questionnaire. Kindly respond to all questions as requested.

The information you provide will be treated with utmost confidentiality and used only for academic purpose.

Thank you in advance

Faith Mwendwa Mwiti

Section A: Demographic information (Please Tick the Correct Box)

1. Kindly Indicate your Designation in the university by ticking in the appropriate box:

Designation	Tick
1. University librarian	[1]
2. Deputy university librarian	[2]
3. Professor	[3]
4. Senior Lecturer	[4]
5. lecturer	[5]
6. Senior library assistant	[6]
7. Library assistant	[7]
Others *(kindly indicate)*	

2. Indicate your gender   Male [1]   Female [2]
3. Please select your age bracket. *Tick the appropriate box.*

            Between 20 and 30 years   [1]
            Between 31 and 40 years   [2]
            Between 41 and 50 years   [3]
            Between 51 and 60 years   [4]
            Between 61 and 70 years   [5]

4. For how long have you been working in the profession? *Tick the appropriate box.*
     0 - 3 years [1]   3 - 6 year [2]   7 - 9 year [3]   above 10 years [4]
5. a. Have you authored any research articles? Yes [1]   No [2]
   b. If your answer in 5a above is Yes. How many -----------
   c. If your answer in 5a above is No kindly give the reason why -------------------------------------
6. Where do you generally publish the research articles that you have authored? In-
     i.   Tier 1 journals   [1]
     ii.   Tier 2 journals   [2]
     iii.   Tier 3 journals   [3]
     iv.   Institutional repositories   [4]
     v.   Others ---
7. How frequently are your journal articles viewed or cited? *kindly tick in the appropriate box*

My research articles have been viewed	Once	twice	Thrice and above	Have never been viewed
My research articles have been cited	once	twice	Thrice and above	Have never been cited

SECTION B:

Objective 1: Institutional repository and open access concept awareness among the academic   staff and library staff

8. *a.* Are you familiar with the following terms
     • Institutional repository   Yes [1]   No [2]
     • Open access?   Yes [1]   No [2]
   b. If your answer above is yes how did you learn about them
          • Library website   [1]
          • Internet   [2]
          • Library staff   [3]
          • Colleagues /friends   [4]
          • Other (*kindly indicate)*   ---

9. The term open access and institutional repositories are commonly used concepts in research and scholarly communication. In the rating of 1-5 kindly give your view on each statement by *ticking in the appropriate box*
SD-strongly disagree=1, D-disagree=2, N- Neutral=3, A-agree=4, SA-strongly agree =5,

	Institutional repository and open access benefits	**SA [5]**	**A [4]**	**N [3]**	**D[2]**	**SD [1]**
1	I am very aware of institutional repositories and open access concept	**[5]**	**[4]**	**[3]**	**[2]**	**[1]**
2	I am aware of the existence of KeMU institutional repository	**[5]**	**[4]**	**[3]**	**[2]**	**[1]**
3	I have used KeMU institution repository to access scholarly work from colleagues	**[5]**	**[4]**	**[3]**	**[2]**	**[1]**
4	I have used other institutions' Institutional Repository to access scholarly work	**[5]**	**[4]**	**[3]**	**[2]**	**[1]**

10. The following are the benefit of institutional repository and open access. In the ratings of 1-3 Kindly indicate your level of awareness with each of the benefits by *ticking in the appropriate box*
 VA-very much aware=3 LA-Less Aware=2, NA-Not Aware=1,

	Institutional repository benefit **I am aware that:-**	**VA** **[3]**	**LA** **[2]**	**NA** **[1]**
1	Institutional repositories enables visibility and accessibility of research outputs of an institution	**[3]**	**[2]**	**[1]**
2	Through Institutional repository the intellectual output and memory of an institution is preserved.	**[3]**	**[2]**	**[1]**
3	Open access enables the visibility of researchers, scholars and the academic community	**[3]**	**[2]**	**[1]**
4	Through Open access there is great citation of a Researcher's work	**[3]**	**[2]**	**[1]**
5	Open Access improves the rating of research institutions internationally	**[3]**	**[2]**	**[1]**
6	Others institutional repository benefits (kindly indicate) ……………………………………………………………………………………..			

Objective 2: Institutional repository advocacy by the library staff

11. Does KeMU library have institution repository advocacy program

- Yes [1]
- NO [2]
- Not aware [3]

12. For the Institutional repositories to achieve its intended purpose in the institution there is need for frequent publicity and promotion for the repository.

In the rating of 1-5 kindly indicate the degree of agreement on the use of the following Institutional repository publicity strategies by the library staff at KeMU. *Tick in the appropriate box.*
SD-strongly disagree=1, D-disagree=2, N- Neutral=3, A-agree=4, SA-strongly agree =5

	Statement	SA [5]	A [4]	N [3]	D [2]	SD [1]
1	The library staff use social networks to promote access and use of the institutional repository	[5]	[4]	[3]	[2]	[1]
2	The library staff use the institutional website to promote access and use of the institutional repository	[5]	[4]	[3]	[2]	[1]
3	The library staff use Face to face strategy with the target group to promote access and use of the institutional repository	[5]	[4]	[3]	[2]	[1]
4	The library staff use seminars and workshops to promote access and use of the institutional repository	[5]	[4]	[3]	[2]	[1]
5	The library staff use emails to promote access and use of the institutional repository	[5]	[4]	[3]	[2]	[1]
6	The library staff use of banners, posters and leaflets to promote access and use of the institutional repository	[5]	[4]	[3]	[2]	[1]
7	Others (*kindly indicate*) --					

13. a) In your opinion do you think institutional repository advocacy by the library staff at KeMU has been effective?
- Yes   [1]
- NO   [2]

b) If No, which of the following aspects of institutional repository would you require training on? Tick all aspect you would require training on.

	Institutional repository aspect I would like more training on:-	Tick (as appropriate)
1	Procedures of depositing my research work in an Institutional repository	[1]
2	Access and use Institutional repository for research	[2]
3	Copyright issues as it relates to institutional repository work	[3]
4	Functions and benefits of having my work in an institution repository	[4]
4	Others (*kindly indicate*) ………………………………………………………………………..	

Objective 3. User perception on open access publication and it influence on the use of KeMU institution repository

14. The following statements indicate various aspects relating to IR content and use. In the rating of 1-5 kindly indicate the level of agreement with each of the statement by Ticking in the appropriate box. **SA-strongly agree =5, A-agree=4, N- Neutral=3 D-disagree=2, SD=2,**

	Institutional repository aspect	SA [5]	A [4]	N [3]	D [2]	SD [1]
1	Content deposited in an Institutional Repository can be accessed by anybody without any restrictions	[5]	[4]	[3]	[2]	[1]
2	Repository content should be peer reviewed	[5]	[4]	[3]	[2]	[1]
3	content submitted in the Institutional Repository is of low quality	[5]	[4]	[3]	[2]	[1]
4	Items in the Institutional Repository are cited more often than article available only in subscribed journals	[5]	[4]	[3]	[2]	[1]

Objective 4. Factors deterring content submission by academic and library staff to the KeMU Institutional repository

15. a. Have you posted any of your research works in any institutional repository? *tick in the appropriate box*   Yes [1]   NO [2]

b. If yes, how easy did you find the submission process?

Very easy [1]   Easy [2]   Not easy [3]

c. If No. Kindly indicate to what extent each of the following contributes to your failure to use or submit your research articles to the Institutional repository at KeMU. *Tick in the appropriate box*

Greater extent=4, Moderate extent =3, Minimal extent=2, Low extent =1

	Reasons for failure to use or submit your research articles to the KeMU IR	[4]	[3]	[2]	[1]
1	Lack of awareness on open access and institution repository benefit	[4]	[3]	[2]	[1]
2	Lack of adequate skills to publish in the Institution Repository	[4]	[3]	[2]	[1]
3	Content in the Institutional Repository is of low quality	[4]	[3]	[2]	[1]
4	Content in the institutional repository is likely to be plagiarized	[4]	[3]	[2]	[1]
5	Others (*kindly indicate*) --				

THANK YOU FOR TAKING TIME TO ANSWER THE QUESTIONNAIRE

Appendix ii: Krejcie and Morgan table for determining sample size

TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	106	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
"S" is sample size.

Krejcie, Robert V., Morgan, Daryle W., "Determining Sample Size for Research Activities", Educational and Psychological Measurement. 1970.

Appendix iii: Nacosti research permit

THIS IS TO CERTIFY THAT:
MS. FAITH MWENDWA MWITI
of KENYA METHODIST UNIVERSITY,
267-60200 Meru,has been permitted to
conduct research in Meru   County

on the topic: FACTORS INFLUENCING
THE GROWTH OF INSTITUTIONAL
REPOSITORIES IN ENHANCING OPEN
ACCESS AT KENYA METHODIST
UNIVERSITY

for the period ending:
7th March,2018

Permit No : NACOSTI/P/17/73381/15791
Date Of Issue : 8th March,2017
Fee Recieved :Ksh 1000

....
Applicant's
Signature

....
Director General
National Commission for Science,
Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officer will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.

REPUBLIC OF KENYA

National Commission for Science,
Technology and Innovation

RESEACH CLEARANCE
PERMIT

Serial No.13035
CONDITIONS: see back page

Appendix iv: Nacosti research authorization

**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,
2241349,3310571,2219420
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
when replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No.

Date

NACOSTI/P/17/73381/15791

8th March, 2017

Faith Mwendwa Mwiti
Kenya Methodist University
P.O. Box 267- 60200
MERU.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *"Factors influencing the growth of institutional repositories in enhancing open access at Kenya Methodist University,"* I am pleased to inform you that you have been authorized to undertake research in **Meru County** for the period ending 7th **March, 2018.**

You are advised to report to **the County Commissioner and the County Director of Education, Meru County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

**DR. M. K. RUGUTT, PhD, HSC, OGW
DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner
Meru County.

The County Director of Education
Meru County.

National Commission for Science, Technology and Innovation is ISO 9001: 2008 Certified

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