

**ASSESSING THE IMPLEMENTATION STATUS OF INSTITUTIONAL
REPOSITORIES FOR SCHOLARLY COMMUNICATION IN THE SELECTED
UNIVERSITIES IN KENYA**

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E65/OL/EMB/26625/2015

SCHOOL OF EDUCATION

**A PROJECT SUBMITTED IN PARTIAL/FULFILMENT OF THE DEGREE OF
MASTER OF LIBRARY AND INFORMATION SCIENCE
KENYATTA UNIVERSITY**

JUNE, 2019

DECLARATION

I declare that this proposal is my original work and has not been presented in any other university/institution for consideration of any certification. This research proposal has been complemented by referenced sources duly acknowledged. Where text, data (including spoken words), graphics, pictures or tables have been borrowed from other sources, including the internet, these are specifically accredited and references cited using current APA system and in accordance with anti-plagiarism regulations.

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DEDICATION

I dedicate this work to Jesus my Lord and personal saviour for his love, care, and support. To my Family: Beloved Husband Anderson Murage; children Hope Wambura, Precious Nyakio, and Lemuel Kamina Murage; Parents: Elijah Njagi, Bancy Wathirikwa Kenway Patrick Ndwiga and Lydia Wambura God bless them for the moral and financial support they have accorded me throughout my studies.

ACKNOWLEDGEMENT

This far I have travelled in my scholarly journey would not have been possible without the help, guidance and divine provision of my Lord and Saviour Jesus Christ, forever His name be glorified.

My family has been the source of inspiration and support. I thank my husband and children very much for being there for me all the time, and being so understanding.

I also wish to appreciate Dr. Ben Wekalao Namande his time, advice, and wisdom that have been so instrumental in ensuring that this study see the light of the day. May God bless him always.

The library and information science Kenyatta university faculty members are also appreciated for their comments and contributions to the success of this work. Lastly, my sincere thanks go to my colleague James Tutu at Muranga University of Technology for their support. May God bless them abundantly.

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ABBREVIATIONS AND ACRONYMS

- OCLC:** Online computer library centre. It charged with duties of ensuring information access at considerable price.
- SPARC:** A body was formed by scholars to help them share resources during publishing of their research outputs. SPARC means, Scholarly publishing, and academic resources coalition (Shearer, 2003).
- KLISC:** KLISC means, Kenya library and information service consortium. It is a body founded by members from public and private academic institutions, it role range from enabling collaborations, and helping members in subscription of electronic resources.
- IR:** Institutional Repository
- INASP:** International network for the availability of scientific publication
- URL:** Universal resource locator
- OAI-MHP:** Open Archives Initiative and Metadata harvesting protocol

ABSTRACT

Institutional repository is a concept that has been embraced worldwide as a means through which academic institution showcase their research output globally. The aim of this study was to assess the implementation status of institutional repositories for transmitting scholarly communication in newly established universities in Kenya, with particular reference to Machakos, Kirinyaga and Embu University. The study objectives were establishing content recruitment criteria the universities employ to populate their institutional repositories, assess role of staff who are charged with responsibilities of managing institutional repositories, establish user awareness levels of the existence and purpose of institutional repositories, evaluate the extent of user acceptance of the institutional repositories and finally identify challenges that face successful implementation of institutional repositories. The study used quantitative and qualitative methods for data collection and analysis. Data for the study was collected through structured questionnaires and interview schedule. Simple random sampling was used to sample data from student population and purposive sampling from the staff. Qualitative data was analysed by the use of content analysis. A statistical package for social sciences was used to analyse quantitative data and represent it through the use of percentages, tables, pie charts and graphs for the purpose of interpretation. The study established that majority of the users (faculty heads and student) were averagely aware of existence of institutional repository. Users had an average perception on institution repository and some were depositing and archiving their research work with the repository. The surveyed institution repositories had fairly functional institution repositories governed by submission and metadata policies. The institutional repository librarians were charged with responsibilities of recruiting content, understood the scholarly communication process. The study concluded that the level of awareness needs to be improved through user education on content hosting, digital archiving and scholarship. The study recommends for methods of promoting institutional repositories concept and management support.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This chapter presents the background to the study, statement of the problem, objectives of the study, research questions, significance, scope, limitations, and delimitation of the study, and finally theoretical and conceptual framework.

1.2 Background to the Study

Institutional repositories in the present era of digitization have opened up vast opportunities in the dissemination of scholarly communication. The emergence of Information Technology has fundamentally changed the way information has been created, stored, and communicated to the users (Zheging, Huiwei, & Wenjing, 2010). However, communicating this knowledge effectively and efficiently is vital to the future research throughout the world. Open access has been found to be the best way of sharing scholarly communication (Faruqi, 2011). The institutional repository uses Open access policy to enable online access to the comprehensive text research (Sidek, 2011). It enables facilitation and distribution of scholarly communication as a solution to inaccessibility due to funds problem, geographical and political barrier, etc. (Harith, 2011). However, to achieve the purpose of open access, there is a need to archive open access material, which leads to the creation of institutional repositories. Institutional repositories are digital files of research materials provided by researchers. The purposes of institutional repositories are to provide a platform for access and dissemination of all digital information materials for scholarly communication. (Reitz, N. D & Bhat, 2010).

Institutional repositories form a permanent and crucial part of the scholarly communication lifecycle (Biswas and Paul, 2010). The primary role of institutional repository is to provide

open access to research literature and to provide extra functionality (Chang, 2014) which can enhance global dissemination of information. Institutional repositories may belong to an institution, such as a university, or created in every respect such as technology or social sciences and may contain various content types and formats, for instance, scholarly articles, reports, theses, audio, video, images, and other materials (Pai, 2014). As repositories expose metadata of each item, they allow the repository content through search engines such as OAIster (Lagzian, 2013).

Globally institutions have embraced implementation of institutional repositories (IRs) since they are now part of vital services offered in academic libraries to enable free access of the scholarly output (Otanda, 2011). Universities core mandate is facilitating teaching, learning, and most importantly research. This activity enables new ideas generation and development through innovation. Institutions act as avenues where knowledge is created, evaluated, published, and disseminated to the user community. Librarians across the globe are the driving force behind institutional repositories successful implementation. According to directory of open access, developed continents have made great success in implementation of functional institutional repositories, for collecting the intellectual ideas from researcher. According to Sawant, (2012), the Coalition for Networked Information members implemented repositories to hold materials in research, teaching, service, and publicity. Activities of colleges and universities range from the text-based items multimedia artifact, images, audio, video, software, blogs, and e-portfolios. A study that was carried out in academic libraries affiliated to Canadian association of research established that most implemented institutional repositories recruit their content widely. Chang (2014) surveyed the state of implemented IRS in thirteen nations and noted that IRS typically holds in most instances information materials in the digital form that is less compared to what the United States and Canada possess in their institutional repositories. Their content includes articles,

theses, books, primary data, video, music, and course material. Chang (2014), points out that institutional repositories implemented in Western Europe contained various publications that included grey literature, research output published and unpublished. Australia institution have also embraced and implemented the institutional repositories and the content they recruit mainly consists of primary data. A study on implementation of institutional repositories and their status in United States, point out that, institutional repositories established are functional and contain a much broader range of materials, and often go far beyond faculty output. In Africa, and in particular South Africa institutions embraced the open access movement and advocated for implementation of institutional repositories in all academic institution. This has become a means through which South Africa collection is accessible in the region and the rest of the world. In Kenya, institutional repository concept gained momentum in 2002 as a worldwide effort to provide digital access to scholarly outputs. Universities under KLISC membership successfully managed to implement institutional repositories, their aim being to proactively respond to open access movement, to display their research output for prestige and to improve access to their local publication. Cullen, (2010) did a survey to assess the status of adoption and implementation of institutional repositories in Kenya, with particular reference to Jomo Kenyatta University of Science and Technology (JKUT). He reported that the institution embraced the institutional repository concept and incorporated it as part of the university strategic plan of 2009-2012. University of Nairobi being one of the most prestigious Universities in Kenya emphasizes the importance of research after teaching and learning. In this respect they have implemented one of the most functional institutional repositories in Kenya (web metric Survey, Jan, 2017). Despite this great success with the already established universities, newly established universities are facing many challenges (McCord, 2013). Otanda, (2011) in her survey of institutional repositories built under KLISC membership observed that implementation process of institutional repositories in universities

in Kenya is slow or stalled due to lack of advocacy through marketing, infrastructures, lack of qualified staff and unfriendly policies that hinder recruitment of content to populate the institutional repositories. Embu, Machakos and Kirinyaga university fall under the category of newly established public universities in Kenya, through the act of parliament, universities act 2008 and 2012 respectively (Kenya gazette, 2012). Hence the need to assess the status of institutional repositories in the selected universities.

1.3 Statement of the Problem

Universities under KLISC membership have successfully managed to implement institutional repositories, their aim being to proactively respond to open access movement, and to display their research output for improved access to their local publications. Despite this great success, most institutional repositories in Kenya and in particular newly established universities are facing implementation related challenges since the processes are incomplete, slow or stalled altogether.

There is a need, therefore, to assess the implementation status of institutional repositories in newly established universities in Kenya.

1.4 Purpose of the Study

To evaluate the status of implementation of institutional repositories so as to determine their adequacy in scholarly communication.

1.5 Objectives of the Study

1. To assess status of implementing institutional repositories and content recruitment.
2. To assess the role of staff charged with scholarly communication process and implementation of institutional repository in universities in Kenya
3. To establish awareness levels of user community on scholarly communication process and purpose of institutional repositories in universities in Kenya.

4. To evaluate user perception towards the institutional repository for scholarly communication in universities in Kenya.
5. To identify challenges to successful implementation of institutional repositories in universities in Kenya.

1.5 Research Questions

The following research questions guided this research

1. What criteria do institutions employ to implement and populate their institution repositories in universities in Kenya?
2. What roles do staff play in implementation of institutional repositories play in universities in Kenya?
3. To what extent are the users aware of scholarly communication process and purpose of institutional repositories in universities in Kenya?
4. What is the perception of users on implementation of institutional repositories for scholarly communication in universities in Kenya?
5. What are challenges that hinder successful scholarly communication process and implementation of institutional repositories in universities in Kenya?

1.6 Significance of the study

Policy formulation and planning

The findings of this research may be of value to planners and developers of institutional repositories. The research also provides key strategies of promoting awareness and acceptance of institutional repository as a means through which universities scholarly output is not only preserved but also accessed.

Knowledge Sharing and Education

The findings of this study may be important source of information to teachers, administrative staff, and students on scholarly communication cycle.

1.7 Assumptions

1. Newly established universities have implemented functional institutional repositories.
2. Institutional repositories stakeholders understand fully the scholarly communication process.

1.8 Limitation and Delimitation of the study

1.8.1 Limitation

The institutional repository concept is a new phenomenon that has been brought about by technological advancement. There is Limited literature about the concept of institutional repository especially on Kenyan new universities.

18.1 Delimitation

The study focuses on assessing implementation status of institutional repositories in newly established universities in Kenya with particular reference to, Embu, Machakos and Kirinyaga University.

1.9 Theoretical and Conceptual Frame Work

1.9.1 Theoretical Framework

The researcher employed two theories, diffusion innovation theory, and contemporary management theory.

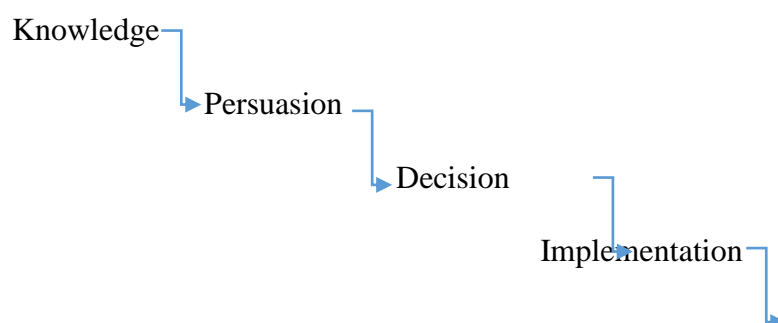
1.9.2 Diffusion innovation theory

According to Rogers, (1995) diffusion innovation theory entails entry of new product or service, innovation through technology and evaluation of reaction of affected parties by the new development. Institutional repository is a concept that is treated as new development since it has changed how research work is being disseminated in various universities. Rogers, (1995) point that individuals perceive innovation differently, to succeed in implementation of any innovation such as institutional repository the stakeholders should be thoroughly

prepared through training and advocacy. In this study, scholarly communication, which is a dependent variable, is achieved through a process of data collection, authoring, publication and finally the cycle is completed through digital archiving of the research output, access, and use of the resources. The above process is dependent on implementation of the institutional repository concept by the stakeholders. The second aspect in diffusing an innovation, Rogers recommends persuasion of all members affected by the development directly or indirectly. In this research, intervening variables such as user community and staff should be persuaded fully to embrace the new development since their perception and awareness levels may help in successful implementation of the institutional repository concept or it remain a mirage. The third and most important part of innovation as pointed out by Rogers is the decision that stakeholders take toward the development. He argues that it is not automatic that the stakeholders appreciate the new development. They may embrace or reject which may affect the institutional repository concept positively or negatively. The fourth aspect of diffusion innovation theory is about successful implementation of the innovation, the three variables should be harmonized, the scholarly communication process should be communicated fully to the community of users, the management should support the new development through funding and advocacy and bridging staff skill gaps. Finally ascertaining that, the new development is functional and brings benefit to the community of user through continuous monitoring and evaluation to counteract the challenge

Diagram representing diffusion innovation theory

Communication Channel



Confirmation

Figure 1.0 Diffusion innovation theory

Source: Diffusion Innovation by Everett M. Rogers, (2003)

Institutional repository concept is a new development in the developing countries. In Kenya the concept gained momentum in year 2000 after INASP discontinued their support of funding electronic journals, since most institutions relied on these electronic resources and could not afford them as individual institution, they came together and formed KLISC to be able to subscribe to these resources as a consortium. The Kenyan government through the leadership of the former president Kibaki directed all institution to implement the open access to data website (www.opengov.go.ke) to provide information to the public. To respond to this, they had to embrace a common platform and the only option was to embrace the institutional repository concept. Diffusion innovation theory advocates for awareness creation about innovation. Many institutions have established institutional repositories and the stakeholders have tried to communicate to the user communities the benefit of having functional institutional repositories with adequate resources and managed effectively. In the aspect of perception as Rogers argues, the community of users and stakeholders have portrayed varied attitudes towards institutional repositories. Some finds it as the appropriate platform for displaying their research output and improving the reputation of the institution, whereas some view IRs in terms of cost implication on already strained budget and lose of right on published work through the institutional repositories. Decision-making is another critical issue in success of any innovation, stakeholders have engaged in activities in respect to adaption of the institutional repositories in almost all KLISC affiliate institutions. Another aspect Rogers points out is implementation of the actual project, actualizing the innovation through ensuring infrastructure to support institutional repository have been put in place, training staff on institutional repository issues to enable them perform effectively, and

anticipating challenges that may hinder functionality of institutional repositories. Finally, evaluation of institutional repository is another aspect Rogers gives prevalence, he argues that any implemented project must be evaluated against plan to ascertain whether the perceived benefits are being achieved or not. The status of implementation of institutional repository in universities particularly in the newly established institution is wanting due to slow uptake of open access ideas, publishing and archiving by the community of users. Success of institutional repositories is dependent on the aspects Rogers has put forth integration of the variables as exemplified below.

1.9.2 Contemporary Management Theory

Contemporary management is a new development; it means new approach in management of organizations through the use of open systems that freely interact with the environment. This theory put emphasizes on institutions to gather resources from its operating environment such as research output from the community of users and use it for the purpose of functioning and growth. Institutional repositories are a new development in developing countries that is being embraced currently by institution of higher learning for purpose of intellectual ideas preservations and sustainability of their prestige.

According to Senge, (2014) learning institutions such as universities are dynamic systems, which are in the continuous state of adaptation and improvement. It focuses on organizations and recommends that stakeholders should embrace new development in scholarly communication through institutional repository and ensure the core purpose behind implementation get achieved, that is enabling creation, authoring, publishing and digital preservation of scholarly output (Giesecke, 2011). Change takes place often and to counteract it the stakeholders should embrace it fully to avoid stagnation and being overtaken by technological changes. Currently, every university wants to be rated well during web metric surveys that evaluate institutions by outstanding status of their institutional repositories.

Senge theory confirms that it is only by coping with change and employing creativity that enable the improvement of institutional repositories in universities.

1.9.3 Conceptual Framework

The study uses a conceptual framework to explain the interrelationship between the variables. Scholarly communication is the variable that is dependent on the implementation of institutional repository, which is the independent variable. However in between them are intervening variables, which include staff competences, acceptance levels and user awareness among others (McCord, 2013). For scholarly communication to be effective there is need for a well-established institutional repository. The relationship between institutional repositories and scholarly communication is underpinned by variables such as staff competences, user awareness, and acceptance among other variables. This is as illustrated below..

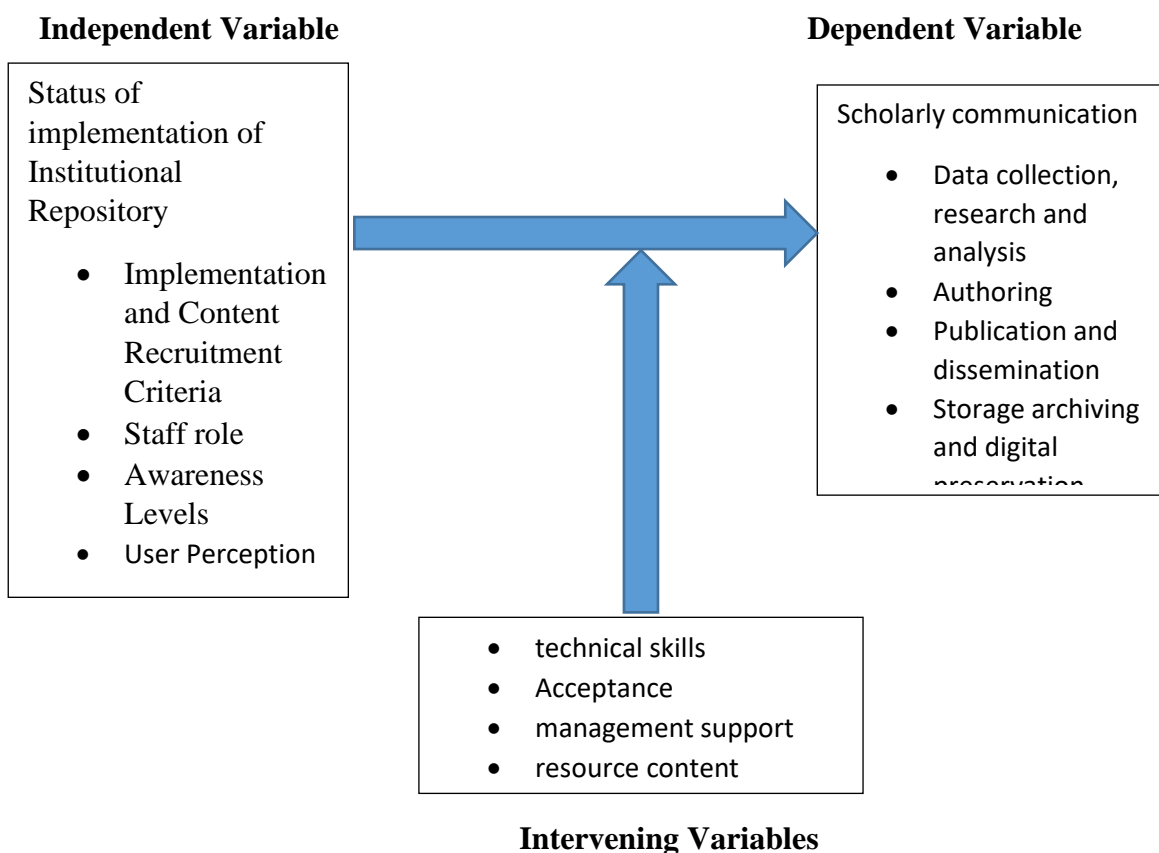


Figure 1.2.A diagram representation of the conceptual framework

Source: Researcher 2018.

A conceptual framework for institutional repository (Source: Researcher, 2017).

Status of implementation of institutional repository is the independent variable of the study. This variable is defined by implementation and criteria used to recruit content; staff role; awareness and perception levels. All these aspects affect the quality and quantity of the institutional repository. This in turn have an effect on scholarly communication for users in terms of data collection, research and analysis; authoring; publication and dissemination; and storage, archiving, and digital preservation.

1.10 Operational / Definitions of Terms

Institutional Repository

It is a digital platform that enables users to preserve and maintain their scholarly output (Lynch, 2005). It provides a means through which intellectual work is showcased in an economic way.

Scholarly Communication

It is a way through which researchers share their intellectual output to a wider user community. It entails creation, dissemination and publishing of research (Crow, 2002)

Content Recruitment

It is a process of gathering information resources through advocacy and marketing from the community of users (Adrian, 2007).

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter reviews literature on implementation and content recruitment criteria, Staff Role in Scholarly Communication Process and Institutional Repository Implementation, Staff Role in Scholarly Communication Process and Institutional Repository Implementation, and Staff Role in Scholarly Communication Process and Institutional Repository Implementation. It also discusses the research gap.

2.2 Implementation and Content Recruitment Criteria.

Institutional repository is a development through which academic libraries enables the communication of intellectual output of the community of users, boost online access and enhance libraries take in any institution (Chang, 2014). According to Aziz, (2011), institutional repositories were implemented to hold student users thesis and dissertation but with times, they started recruiting diverse collection ranging from scholarly work, conference papers and specific student publication. According to Ezema, (2011) embracing of institutional repository concept and the open access movement in Kenya will enable information exchange and gap bringing between developed and undeveloped countries. According to Row, (2011) successful implementation of institutional repository is not

dependent on the type of system software an institution adapts but the quality and quantity of the resources recruited to populate the institutional repository. Biswas, (2012) also argues that institutional repository implementation is about employing the best criteria in acquiring the information resources for the institutional repository. Mukhopadhyay, (2013) point out that, analysing the type of content that should be recruited to form part of resources for the institutional repository is paramount to software adopted and technical support. He continues to argue that when the best criteria are employed during content recruitment, it translate to successful implementation of institutional repository (Mukhopadhyay, 2013).OCLC point out very crucial issues on content recruitment and implementation, he argues that, even in this era of great technology revolution and advancement there is still no laid down policies on what should be included in the repositories in terms of content. Other issues that emerges concerns criteria in selection and personnel responsible for building collection of the IRs. According to Lagzian, (2013) focus on institutional repositories implementation is mostly on infrastructure and the technology that should be employed in establishing them such as, designing of functional institutional repositories software's. Metadata is another aspect that the researcher features mostly. Metadata means data about data, the information resource format is paramount if the institutional repository concept is destined to succeed, and the issues of types of materials that should be recruited in institutional repositories should be less emphasized. (Palavitsini, 2017). OCLC argues that for libraries to succeed in their endeavours' of implementing functional institutional repositories, it is apparent to take into consideration the type of information materials institution select for institutional repositories. Sidek, (2011) points out that, after a survey of the content of many implemented institutional repositories, he established that, they contain mostly subject based information resource. This is critical to the success of any institutional repository that does not accommodate diversity. SPARC is a coalition that advocates for open access and digital preservation of material, in

their report they recommended for inclusivity in content recruitment of resources for institutional repositories .Australia commenced a survey in it academic institutional repositories to establish the status of implementation and criteria employed in selection of resources for the institutional repositories. The report that was compiled indicated that, most of these institutions do not follow any criteria; they build their collection according to the need of the users. This report guided on how to identify resources for institutional repositories, and the traits they should possess, however this report did not dwell much on specific selection criteria in content recruitment of resources. Sidek, (2011) in his report focused on implementation of institutional repositories and resource recruitment in regard to quality control and standard of research output that are to be preserved in the institutional repositories .Institutional repositories according to SPARC holds publication such as journals, peer reviewed articles, and formal publications. This coalition recommended diverse resources recruitment such as gray literature but did not give any criteria or set standard to govern their inclusion in institutional repositories (Pai, 2014).

2.2.1 Submission Policy

Institutions have adopted different strategies in gathering content for the institutional repositories. Susan, (2012) in their DAEDALUS project of developing an institutional repository for Glasgow University noted that information resources that are added to digital platform provided by institutional repositories are of different form to already available imprint and peer reviewed publication, thus need for submission policies to cater for users concern. Policies come with guidelines on how to submit electronic thesis and other printed publication to the institutional repositories. Row, (2011) in his study pointed that leaving user to choice when and how to submit their research output, probably through creation of an online submission form will not yield result since users must be informed and persuaded as many time as possible for them to comply. Biswas, (2012) recommended that information

professional in universities should be assigned the role of writing guidelines and submission policies if populating institutional repositories will be achieved. Mukhopadhyay, (2013) observed that institutional repositories can be a platform where copyright issues can be violated since they hold various type of publication ranging from grey literature , theses, conference papers etc., to control deposit of the scholarly work, content management policies and document version control system should be put in place through the submission policies (Row, Biswas, and Mukhopadhyay, 2016)

2.2.2 Metadata Policy

Metadata entails data about data. Institutional repository staff should ensure measures are put in place to ensure metadata are created with up to date and correct standard. Nikolaos, Nikos and Salvador (2017) pointed out that indexers should be trained on metadata entry in regard to use of controlled vocabularies and library of congress subject heading. They further recommended that, cataloguing department should provide consistence and comprehensive standards. Iryna, (2013) point that, the technology employed during implementation of an institutional repository should have standards that deals with the criteria of selection of metadata that should be deposited in the institutional repository. According to a survey that was commenced by Carl from Lincoln University on promotional methods that can be employed to enhance uptake of open archive metadata harvesting for digital platform of data preservation, he observed that, many institutions have not fully embraced the protocol Roy, (2015). According to MUKhopadhyay, (2016), libraries have strived to ensure institutional repositories are fully supported through mapping their resources to Dublin core metadata element to enable international visibility of their scholarly output.

2.2.3 Presentation and URL Link

Institutional repositories are implemented to enable free access to resources regardless of geographical location. According to Ifeanyi, (2011) to support the institutional repository

concept and the purpose to which they are created for, the stake holder should ensure all the infrastructure are provided. Interoperable is an important feature in institutional repository implementation since it entails issues of software compliance with OAI-MPH to enable communication with other institutional repositories locally, regional and globally (Adewole, Adewumis and Nicholas Omoregbe, 2011) According to researches done on appropriate software for institutional repositories, two software are popular in many institutions (Eprint and Dspace) developed by university of Southampton and Massachusetts Institute of Technology.(Adewumi and Omoregbe, (2011). Meyer, (2011) pointed out that the choice of a software is determined by the software ability to provide a universal resource locator to the end users hence most institutions prefer Dspace due to the flexibility it URL provides. Wang, (2011) in his report noted that an institutional repository should be implemented upon an open network, can be customized, and supported by a communication protocol to enable interoperability.

2.3 Staff Role in Scholarly Communication Process and Institutional Repository Implementation

Staffing is a paramount issue in the success of implementation of institutional repositories. Cassella, 2012 did a survey at Kansas State University and observed that, institutional repository is a concept that has been embraced fully but staffing was wanting. He pointed out that, despite successful implementation of the institutional repositories, it was managed by one person, which could hinder the growth of many institutional repositories. According to Marrow and Mower, (2009) institutional repository deserves to be equipped with personnel who understand fully the process of scholarly communication, from data collection, authoring, publication, and digital archiving of information resources. Aziz, (2011) point out that, staffing is a critical issues in success of institutional repository, however if management of institutions fail to acquire competent staffs to manage institutional repositories they will be

destined to fail. Chang, (2014) in his study proposes that, all staff charged with the responsibility of managing the institutional repositories should be given formal or in-house training on the scholarly communication cycle to help them perform their duties effectively and efficiently. Simon and Richardson, (2012) in his study gives another opinion on staffing, he point out that, institutional repositories management should be left to trained librarians who understand the process of collection development. He continues to point out that, since librarians are knowledgeable about selection criteria and what forms quality information materials that can be recruited to the institutional repository. Librarians should appreciate the direction technology is shifting, that is moving from traditional print to electronic preservation and access, they should consider working together with information technology personnel for them to carry out their mandate successfully (Richardson, 2012).

2.4 User Awareness about Institutional Repositories

Libraries across the divide have been charged with responsibilities of implementing the institutional repositories concept, they ensure users are acquitted with the scholarly communication process, content recruitment, digital preservations of e-print resources, dissemination and use (Aziz, 2011). Institutional repositories offers a good platform of sharing and networking among researchers in institutions. This important role cannot be achieved without organizations purposing to advocate for their usefulness by creating awareness (Erickson, 2008). According to Troll Covey, 2011 marketing of institutional repositories is an activity that should be done by librarians to increase faculty participation. Survey by Harith, (2011) pointed out lack of awareness of open access hence researchers prefer self-archiving of one's scholarly work in the websites rather than use of institutional repositories. Awareness is critical for institutional repositories success and this is determined by contribution and use of resources by faculties and student (Harith, 2011). Survey done by omeluzor, (2014) indicates that content recruitment strategy that is done by information

professional is poorly executed. They request for scholarly work from various faculties and do not involve the contributors' during content deposit to the institutional repositories. A study done by Aziz, (2011) gave a different perspective of creating awareness, he points out that, users and contributors can be made aware of scholarly communication process and importance of an institutional repository through developers putting infrastructure in place that support foundational, structural and semantic communication of institutional repositories systems. User-friendly search engine that are interactive and provide information on new additions to the institutional repositories in real time basis. Xia, (2008) established that, despite researcher being aware of the institutional repositories they are not willing to deposit their work with this entities. Saturday, (2014) in his study pointed that, institutional management are not embracing their core role of persuading the researchers to contribute to the institutional repositories. According to Barwick, (2007) Universities should consider other marketing ways of the institutional repositories rather than involving the management and faculty. Ramirez, (2011) in her study point a different perspective of creating awareness on implementation and scholarly communication process, she recommends copyright clearance as means of marketing institutional repository to the user community. Miller, (2011) recommends use of reference librarian to drive the agenda of advocacy in regard to purpose of institution repository.

2.5 Users perception of Institutional Repositories

An institutional repository is a development that provides platform for creation, publishing, and dissemination of scholarly output of a university community. Institutional repository is founded on an open access technology that enable digital input of articles, journal and other publication and showcasing to external user community Lagzian, Abrizah and Wee, (2013). However surveys done have established that users prefer use of google scholar and other avenues provided by technology for their research activities despite academic institution

endeavour's in implementation of functional institutional repositories and the open access movement (Aziz, 2011). Institutional repositories success is dependent on authors who deposit their resources for preservation, use, and showcasing to the world at large. To achieve this purpose the creators should be willing to cooperate and entrust their intellectual output to the institutional repositories (Sawant, 2012). Aziz, (2011) point out that, users don't have full confidence with institutional repositories, they are skeptical to surrender their work, with perception that, they may lose their right over their intellectual output. Institutional repositories according to Sawant, (2012) offer services that are less important, and those they consider useful they are nonexistence. According to Peter,(2008) open access and the institution repositories implementation will bear fruits once the stake holders start providing information that is tailored to their needs. Users have negative perception of using digital information pointing information explosion to unmanageable levels, and cite unfriendly policies that deny them rights of controlling their scholarly work once they deposit with institutional repositories Dorner, (2012).User perception against institutional repositories is attributed to factors like copyright, publishing, quality control issues on other publication and plagiarism by users Pai, (2014). According to Lagzian, Abrizah and wee, (2013) urges that successful implementation of institutional repositories is dependent on user perception of resources contained in the institutional repositories, location and time.

2.6 Summary of Literature and Research Gap

User perception of the institutional repositories is an important matter that should be addressed; the studies the researcher reviewed have not considered educating user on how to use the institutional repository and employing user-friendly interfaces that could enhance use, access, dissemination, and digital publishing of scholarly research. In addition, studies conducted do not show evidence of benefit of users in all categories (Creators and consumers of information).

Other issues done by different researcher have covered issues like networking and sharing, lack of involvement of users and contributors during content recruitment, use of technology that is not interactive. Institutional repository is a digital resources implemented to provide platform of archiving, preservation and showcasing through open access, to archive this, robust measures should be put in place to create awareness such as user need assessment survey to craft effective ways of creating awareness. However no researcher have provided sufficient information on user needs as part of creating awareness hence the need for this study. Literature done investigates and discusses implementation ways, factors that hinder adoption and acceptance. All these studies do not guide on the successful ways of ensuring the status of institutional repositories has improved across the globe

Finally, in all the studies that the researcher has reviewed, there is none that gives sufficient information on content recruitment and how it should be done to guide selection of resources for institutional repositories. In addition, the researches done do not give clear guidelines on schema for metadata domain for specific non-text objects such as objects used for learning and projects and theses. Hence the need for this study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The chapter describes the research design, and locale of the study, population of the study, sampling techniques and sample size determination, research instruments, data collection, and data analysis.

3.2 Research Design and Locale

According to Creswell (2013) research designs, “are plans and procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis”.

Research design enables a researcher to connect gathered information with the formulated questions, in respect to a certain strategy and framework, it guide a researcher from whom and how to collect information from (Punch, 2009).

The descriptive research design was used to help describe how implementation of institutional repositories impacts on scholarly communication in universities in Kenya. The design helped the researcher in obtaining information on the present state of institutional repository implementation and in describing the other variables in this study.

The information collected was presented using graphs and charts to enable understanding of data distribution.

3.2.1 Location of the Study

The study was carried out in some selected universities in Kenya; Kirinyaga, Machakos and Embu University They were selected for the study because they were in the category of newly established universities under Gazette notice of 2011, and chartered in 2016.They are in the process of implementing their institutional repositories.

3.2.2 Variables

According to Kothari, (2014) a variable is an object with characteristics that are measurable and have varied values among the subject. The independent variable in this study is the implementation of institutional repository, of which scholarly communication is dependent upon. Scholarly communication is achieved through a series of processes that is data collection and research analysis, authoring, Publication and finally storage archiving or digital preservation. There are also intervening variables that affect both independent and dependent variables they include; management support, technical skill, user perception, content and awareness.

3.3 Population

Target population is a group of individual who possess desired characteristic in which the findings of the research are based upon (Mills, 2009). Faculty heads, institutional repository librarians and students were the target population for this study.

Table 3.1 Target Population

3.4 Sampling Techniques and Sample Size determination

Respondent	Population Size Kirinyaga University Lib	Population Size Machakos University Lib	Population Size Embu University Lib	Sampling Technique
Institutional repository librarians	1	1	1	Purposive Sampling
Students	30	30	30	Simple Random
Faculty heads	3	9	5	Purposive Sampling
Source: researcher (2018).				

3.4.1 Sampling Techniques

The researcher used simple random sampling and purposive sampling technique to obtain sample for the study. Simple random sampling involves assigning numbers to every subject of accessible population and then picking them at random (Mugenda , 1999). The researcher employed simple random sampling due to the flexibility it offered to the researcher during obtaining of the sample for the study. Simple random sampling is a sampling technique, which gives individuals equal chance of being sampled for the study in a given population. The 1st and the 3rd user were selected for the study through simple random technique in a population frame of 90 students.

Purposive sampling technique employs the technique of availability, convenience and desired researcher characteristics (Silverman, 2000). Purposive sampling gives the researcher freedom of choice in respect to the object of the study as long as they meet certain characteristic (Kothari, 2014). Purposive sampling gives better control of significant variables and sampled data from a group can be easily matched. The researcher selected faculty and

library staff purposively since they were perceived to be well informed about institutional repositories.

3.4.2 Sample Size Determination

The researcher used purposive technique to obtain sample of the study that were unique and informed about the subject of the study. Faculty and Staff were purposively selected as respondent in this study. The the staff in the selected universities were knowledgeable about the subject of the study. Students were also sampled using simple random sampling technique. The researcher establish the number of users who used institutional repository from the library staff, and since research shows there are only thirty people who use IRs in a day, the 1st and every 3rd were picked for the study .Since the researcher was not there to determine the first and third user, she engaged the head of institutional repositories to determine the order of institutional repository users.

Table 3.2 Sampling procedures

Respondent	Population N	Sample (n)	Percentages %	Sampling Technique
Institutional repository librarians	3	3	100%	Purposive Sampling
Students	100	30	30%	Simple Random Sampling
Faculty Heads	19	19	100%	Purposive Sampling

Source: Field Data (2018).

3.5 Research Instruments

Research instruments are data collection tools that are employed to measure data on researcher topic of interest (Mugenda, 1999). The researcher used questionnaires and interview schedule for data collection. The research instruments were piloted at Muranga University of technology.

3.5.1 Questionnaires

The questionnaires were constructed as per the objectives of the study; both structured and unstructured questions were used to obtain information from respondents. Questionnaires were administered to faculty heads, and students in the selected universities by the researcher. Questionnaires were used to collect quantitative data, since they are less expensive compared to other data collection tools, and their flexibility of being administered to a large number of respondent, regardless of their geographical distribution. The researcher used physical contacts to deliver questionnaires to the respondent. The method was chosen because of the convenience and flexibility it offered to both the researcher and the respondent.

3.5.2 Interview Schedule

Interview schedule was used to gather qualitative information from institutional repository librarians from the three universities. The researcher interviewed three librarians in charge of the institution repository, one from each university. The researcher booked an appointment with each respondent, and a face-to-face interview was conducted with the guide of the interview schedule.

3.5.3 Pilot Study

Pilot is a research instrument that help the researcher ascertain the feasibility of the study to the real world (Silverman, 2000). Pilot study was carried out before the actual study at Muranga university of University. The researcher selected this university because it has similar characteristics with the universities the study was based, in that the university was

established through the gazette notice of 2011 and chartered in year 2016. The questionnaires were tested by selecting respondent randomly. The 3rd user out of every 15 student was picked for the study. For the staff 4 respondents were selected for the pilot study. This helped the researcher to identify errors, and improve on them before carrying out the actual study.

3.5.4 Validity

Validity is the measurement of extent of accuracy of the data obtained for the study (Rubin, 2009). Content validity of the research instruments was established by involving subject matter experts who evaluated the test items against the test specifications. The researcher consulted the validity of the items against each of the constructs, and accordingly modified the instruments based on the subject matter experts.

3.5.5 Reliability

Reliability according to Kothari, (2014), tests consistency of result after repeated test. The researcher used test retest technique. This involves testing twice or thrice the object of the study. Reliability was established through administering questionnaires to the same respondents after a given period, the researcher checked the consistency of the respondent between the two administered tests. The researcher established the extent of similarity in the two administered tests with correlation coefficient statistical method, the researcher sought to arrive at similar results from the two administered test from the study instruments, the reliability test produced a coefficient of 1.00, establishing reliability the instruments.

3.6 Data Collection

Data was collected using questionnaires and interview schedules. The researcher physically distributed questionnaires to the sampled population in the three universities, Kirinyaga, Machakos and Embu. Face to face, interviews were conducted with Institutional repository librarians in the sampled universities.

3.6.1 Logistical and Ethical Considerations

According to Silverman (2000), logistical considerations involve strategies crafted and put in place to ensure successful research completion. The researcher employed a comprehensive work plan and budget for research to cater for logistical issues.

3.6.2 Ethical Considerations

Ethical aspects entails conducts and behaviour of the researcher, it informs him or her on issues of observing copyright law while carrying out their research activities. Ethical consideration guide users on how to handle privileges, maintain confidentiality and privacy of respondents (Mugenda, 1999). Confidentiality of the respondent was assured through maintenance of privacy, and anonymity. The researcher secured permission from the graduate school and NACOSTI before undertaking her research. Finally, under ethical considerations the researcher cited all consulted sources and referenced them accordingly

3.7 Data Analysis

Data analysis involves evaluation of information collected from the field through analytical and logical ways, then data is cleaned; coded and analysed for the purpose of interpretation (Singh, 2004).The data collected was analysed into meaningful and relevant information and later presented in form of tables pie charts and graphs. For the purpose of better interpretation, the researcher prepared means and percentages. Qualitative data was analysed as per themes derived from the study objectives. Where possible respondent's voices were quoted (verbatim)

CHAPTER FOUR

FINDINGS, INTERPRETATION, AND DISCUSSION

4.1 Introduction

This chapter presents the findings, interpretations, and discussion according to the objective of the study. The study had five objectives:

1. To assess status of implementing institutional repositories and content recruitment.
2. To assess the role of staff charged with scholarly communication process and implementation of institutional repository in universities in Kenya
3. To establish awareness levels of user community on scholarly communication process and purpose of institutional repositories in universities in Kenya.
4. To evaluate user perception towards the institutional repository for scholarly communication in universities in Kenya.
5. To identify challenges to successful implementation of institutional repositories in universities in Kenya.

To achieve the above objectives the researcher collected data by use of questionnaires and interview schedule. Faculty heads and student filled the questionnaires, and the library staff in charge of institutional repositories responded to the interview schedule. The interview schedule was used to collect data on status of institution repository implementation, and content recruitment criteria used to populate the repository, and the role of the library staff in charge of the repository. The faculty heads and student answered the questionnaire with regard to their awareness and perception of the institutional repository.

4.2 General and Demographic Information

4.2.1 General Information

The total target population for the study was (107) respondent comprising of (90) students, and (17) faculty heads. The researcher distributed (107) questionnaires to the target population, out of which (61) were completed and returned, representing a return rate of 57%.

Table 4.1 represents the summary of questionnaire distribution and return response rate.

Table 4.1: Questionnaire Distribution

		Institution			Total
		Kirinyaga	Embu	Machakos	
Category	Faculty Head	3	5	9	17
	Student	10	14	20	44
Total		13	19	29	61

Source: Researcher (2018).

4.2.2 Demographic Data

The researcher sought to establish the demographic composition of the target population of the study in the three universities, Kirinyaga, Embu, and Machakos. The data sought included gender, category, and education level.

The established that the gender composition of the respondent at Kirinyaga University consisted of 6 (46.15%) female students, 4 (30.77%) male students, 1(7.69%) female faculty head, and 2(15.38%) male faculty heads, as captured in Figure 4.1

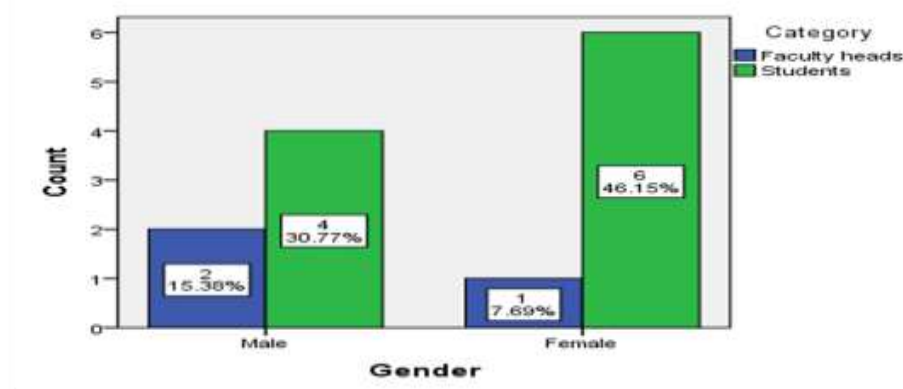


Figure 4.1 Kirinyaga University Gender

Source: Researcher (2018)

The number of faculty heads respondent for the study in this university were (3) at (23.08%), and the students were 10 (76.92%) as shown in the figure 4.2

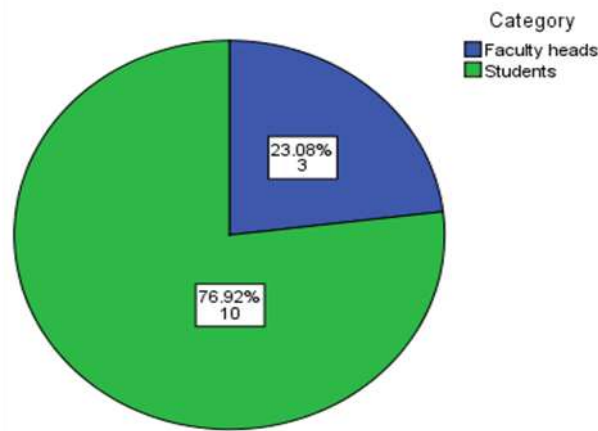


Figure 4.2 Kirinyaga University Categories

Source: Researcher (2018).

The majority of students respondent at Kirinyaga University were undergraduate at (46.15%), the percent of students enrolled for masters was 30.77%, however all sampled faculty heads at (23.08%), were PhD holders as captured in figure 4.3.

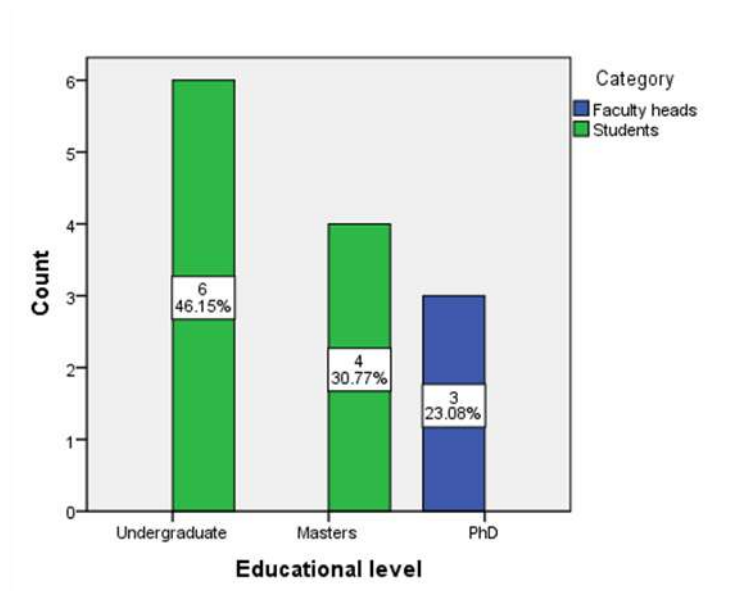


Figure 4.3 Kirinyaga University Education Level

Source: researcher (2018).

The demographic data collected from Kirinyaga University indicated that more female students (46.15%) than male students (30.77%) responded to the study. The study also

established that more male faculty heads (15.38) responded as compared to female faculty heads (7.69%). The sampled population at Kirinyaga University consisted of three faculty heads, and ten students. Majority of student's respondent were undergraduate students, and the three faculty heads respondent were PhD holders.

The researcher also sought to know the gender distribution at Embu University. The study established that male respondent from the faculties at Embu University were 2 (10.53%), and 3(15.79%) female 8 (42.11%) male students, and 6(31.58%) female students as depicted in figure 4.4.

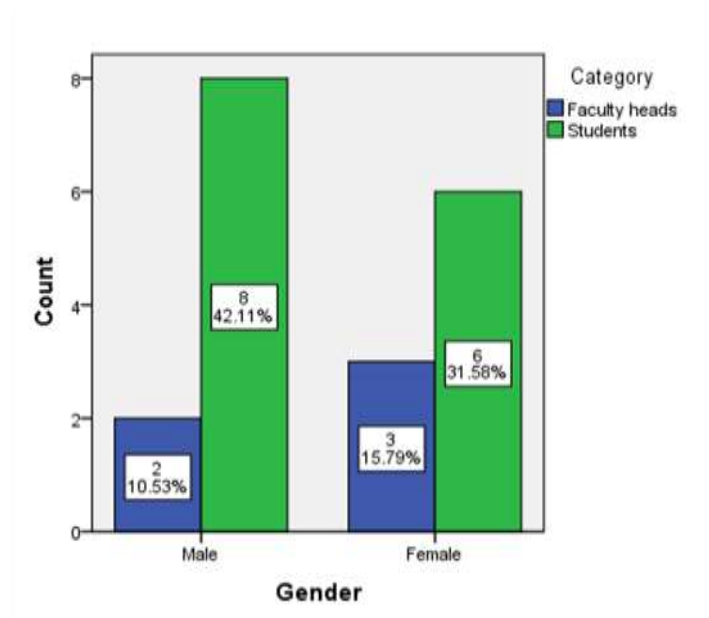


Figure 4.4 Embu University Gender

Source: Researcher (2018).

The study established that most respondent from the faculty were male at (42.11%) and the female were the majority at (31.58). The total number of students respondent at Embu University was 14(73.68), and 5(26.32%) faculty heads as represented in Figure 4.5.

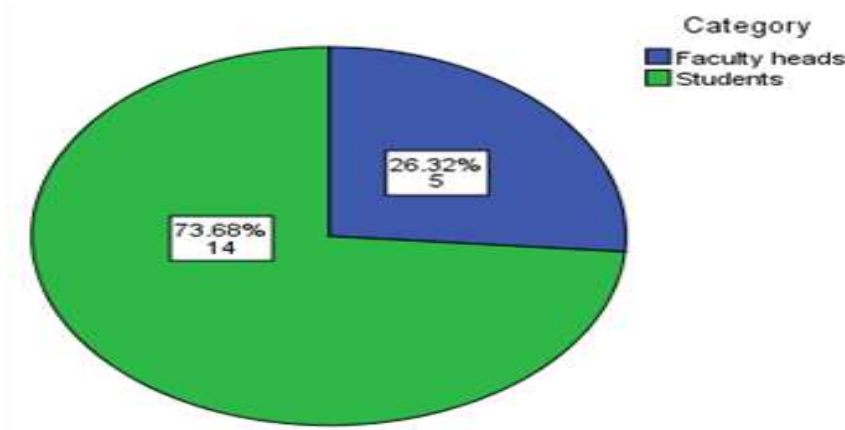


Figure 4.5 Embu University Category

Source: researcher (2018).

The undergraduate students respondent for the study in Embu University were 8 (42.11%), master's students were 6 (31.58%). Faculty heads with a master's degree was 1 (5.26%), and those with PhD were 4(21.05%), as displayed in figure 4.6.

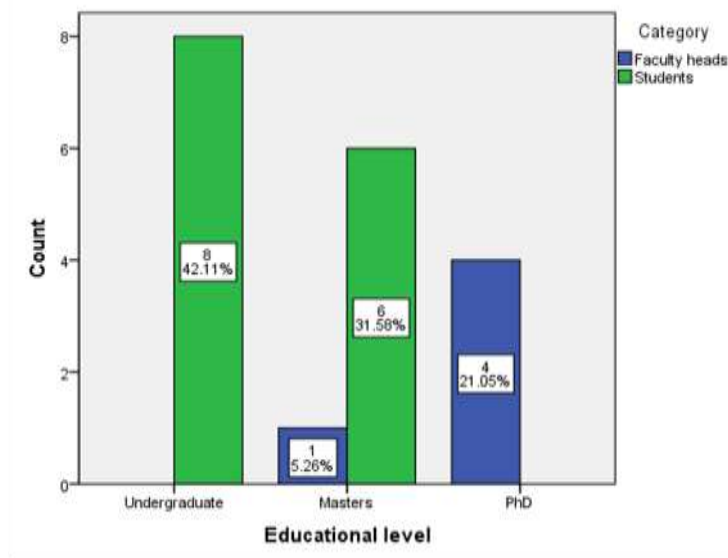


Figure 4.6 Embu University Education Level

Source: researcher (2018).

The researcher established that the demographic population of responded at Embu University was made up of more female faculty heads at (21.05%) and male students at (5.26%). The sample comprised of (14) students, and (5) faculty heads. According to this result the

researcher established that most of the students were undergraduates at (42.11%), while the faculty heads were doctorate holders at (21.05%).

Consequently the study sought to know the composition of respondent at Machakos University and came up with the following statistics. Faculty respondent at Machakos University comprised of 8 (27.59%) male faculty heads, and 1 (3.45%) female heads. The student population had same number of male 10 (34.48%) and female respondent, 10 (34.48%), as shown in the figure 4.7 below.

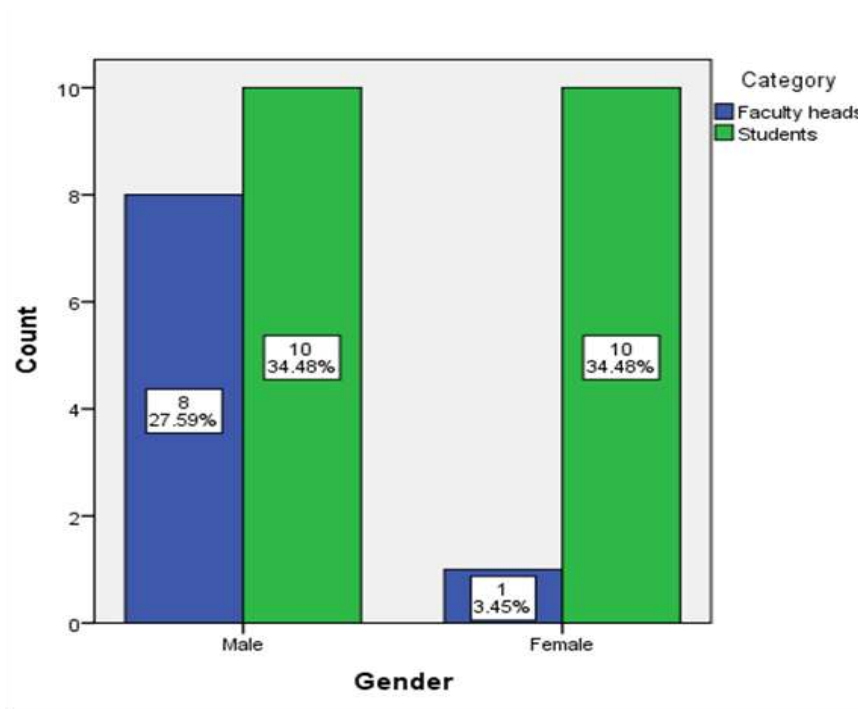


Figure 4.7 Machakos University Gender

Source: Researcher (2018).

The researcher sought to know the composition of the respondent at Machakos University and established that there were less faculty respondent at 9(31.03%), and the student were more at 20 (68.97%), as shown in figure 4.8.

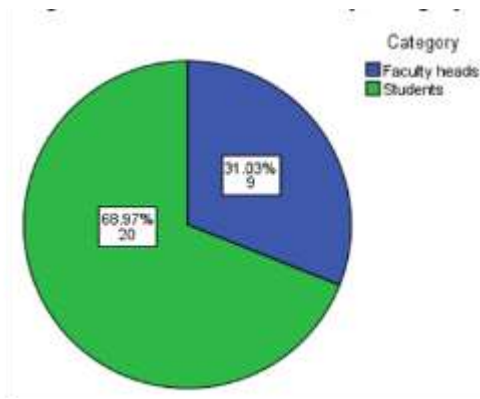


Figure 4.8 Machakos University Category

Source: researcher (2018).

The study sought to establish the level of education for the respondent at Machakos University and found out that there were 11(37.93%) undergraduate students, 9 (31.03%) were masters students. This statistics shows that most response was gathered from undergraduate student in this University. On the other hand Faculty heads with masters level of education was 5 (17.24%), and the lest 4(13.79%) were PhD holders meaning more response came from faculty head with master level of education. These findings are summarised in Figure 4.9.

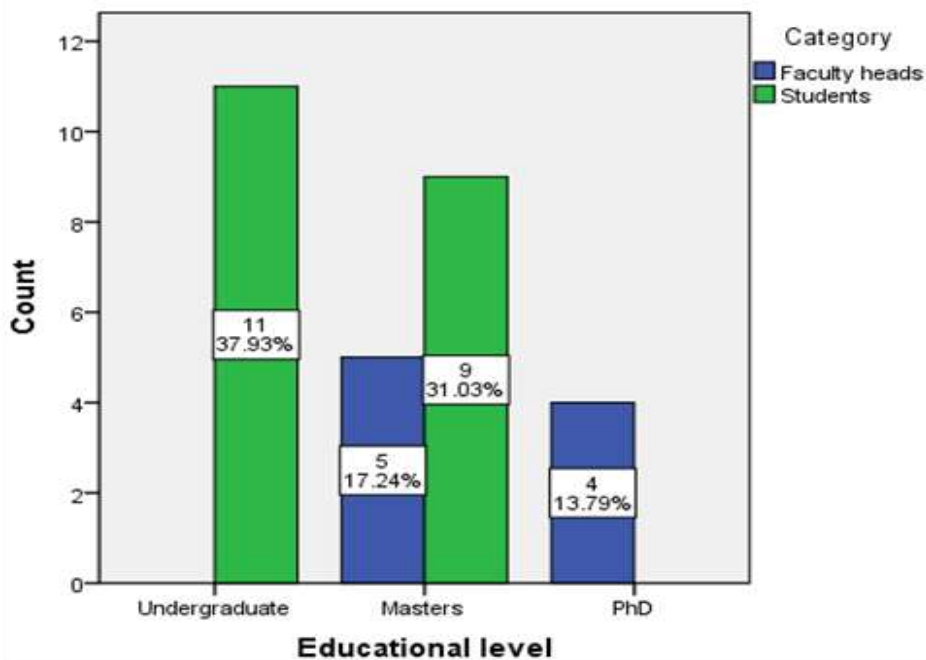


Figure 4.9 Machakos University Education Level Source: researcher (2018).

4.3 Institutional Repositories Implementation and Content Recruitment Criteria

The first objective of the study was to assess the status of implementation of institutional repositories and content recruitment at universities in Kenya. To achieve the objective the researcher conducted interviews with repository librarians at Kirinyaga, Embu, and Machakos universities. The repository librarians were interviewed on type of resources held in the repository, criteria used to recruit the resources, and existence of metadata standards

4.3.1 Institutional Repositories Implementation and Content Recruitment

The study sought to establish the status of institutional repository at Kirinyaga University. The researcher asked the librarian what resources were held by the repository. In response the librarian stated,

“The repository houses conference/workshop/seminar proceedings, journal articles, and book chapters published by our lecturers, staff, and students. In addition the repository has speeches, policies, reports, newsletters, research papers, theses and dissertations, and undergraduate projects”

The librarian further asked about the criteria used to recruit the resource, and the librarian implied,

“The resources have to be relevant and current to be included in the repository”

Asked on whether there were standard to govern metadata,

“The librarian replied in the affirmative. However the librarian explained that the publishers of the software used to host the repository were responsible for standardising metadata and communication protocol”.

Similarly the researcher sought to know the content recruitment criteria employed at Embu University. According to institutional repository librarian,

“The institutional repository is a home for the pictures of Embu University, workshop proceedings, graduation booklets, reports, book reviews and book chapters, journal

articles, master theses and projects, PhD, theses and dissertations, research papers, speeches, staff profiles, lecturers, and training/seminars/conference papers?”

Asked of criteria used in recruitment of institution repository content, the librarian said,

“The content has to be in line with the purpose of the repository, which is to preserve and disseminate the scholarly content of Embu University. We also consider user services, and the scope or the coverage of the repository”

When the librarian asked about the standard replied,

“There is a standard to govern institutional repository metadata, the librarian pointed out that metadata standards and communication protocol of the repository was in build within the institutional repository software deployed. .

Finally the researcher sought to know the content held at this university and the criteria they use to recruit their content. When asked what type of resources Machakos University repository had, the institutional repository librarian replied,

“The repository has journal articles published by lecturers and members of the staff, university past examination papers and speeches made by the university vice chancellor”

On criteria used when recruiting institutional repository contents, the librarian said:

“We are mainly guided by the relevancy of the resource and the mandate of the university, which is basically to teaching and research”

The researcher further inquired on existence of standard to govern metadata and communication protocol. The librarian replied,

“Institutional repository metadata and communication protocol are part and parcel of institutional repository software”

The researcher established through the interview conducted with institutional repository librarians from Kirinyaga, Embu, and Machakos universities that the universities had

functional institutional repositories. The content of the repositories consisted of papers from conference, workshop or seminar proceedings, published journal articles, books and book chapters, speeches, policies, reports, newsletters, graduation booklets, theses and projects, photographs, examination past papers, lecture notes, and staff profiles.

The above finding echoes sentiments by Shreeves and Craigin (2008) that institutional repository contain varied contents depending on the goal of the repository. Some of the content that may be in an institutional repository but not in any of the three surveyed repositories includes data sets, websites, audio and video materials. However, this wide range of materials according to McDowell (2007) may hamper the institutional repository goal of open access especially when copyrighted published journal articles form part of the content.

Content recruitment is essential in building up the institution repository. The criteria used for content recruitment varied among the universities sampled. At kirinyaga University relevancy and currency formed the basic criteria for content recruitment, at Embu university the purpose of the repository and scope formed the criteria, while at Machakos university content recruitment criteria included the relevancy of the information resource and the mandate of the university. The criteria applied by the librarians for content recruitment heavily borrow from criteria used for selecting library books. Going by the librarians' responses, there were no content submission policies. Biswas and Paul (2012), argue that for an institutional repository to be successful there should be written guidelines on content recruitment and submission policies that clearly spell out the criteria. The policy should clearly state the type of content, format, and copyright issues.

When asked about the metadata standard and communication protocol all the librarians stated that they relied on the standard and communication protocol set by the software provider used to run institutional repository. This concurs with a recommendation provided by Solodovnik (2017) that the technologies employed during the implementation of an institutional

repository have standards that deal with the criteria of selection of metadata for items ingested in the facility. However, Chapman, Reynolds, and Shreeves (2009) lament that institutional repositories use different types of metadata leading to inconsistency, lack of authority and poor vocabulary control. There is a possibility of this in the surveyed repositories if different software were deployed, though the librarians were not asked about the type of software they had deployed for institutional repository. This should be pursued for further study.

4.4 Staff Role in Scholarly Communication Process and Institutional Repository Implementation

The second objective of the study was to assess the role of staff charged with scholarly communication process and implementation of institutional repository in universities in Kenya. The researcher interviewed the Institutional repository librarians at Kirinyaga, Embu, and Machakos universities, on their role in scholarly communication and institutional repository implementation.

The researcher sought to find out what role staffs play during scholarly communication process in the implementation of the institutional repository. At Kirinyaga University when asked about the roles of staff in the scholarly communication process and institutional repository, the librarian in charge replied,

“ The staff are charged with content recruitment, creating awareness among the user community by marketing the institutional repository, uploading and describing the content, training lecturers and students how to access the repository, educating the user community on open access, and copyright issues”

Similarly the study sought to establish the role staffs play in Embu University in institutional repository implementation and scholarly communication. The librarian replied,

“The institutional repository librarian is tasked with the responsibility of Populating the repository with relevant content; marketing the repository through of exhibitions, newsletters, brochures; training user community on open access and copyright issues; identifying the metadata schema to be used, and facilitating full description of resources as per the schema”

Finally the researcher sought to know the role of staff in scholarly communication process and institutional implementation at Machakos University institutional repository. The librarian stated,

“Recruiting the content to be upload to the repository; ensuring user community are made aware of the existence and purpose of the repository. This is important in content recruitment and use of the repository. Once the content is upload it is described using standardised metadata for retrieval purposes”.

The researcher gathered the following through interview carried out with the institutional repository librarians from Kirinyaga, Embu, and Machakos universities. The librarians were responsible for content recruitment, marketing the institutional repository, uploading and describing content, training the user community on open access and copyright issues.

The roles identified by the librarians were reflective of research findings on repository librarian roles. For instance, research by Allard (2005) identified the following roles of librarians in institutional repository implementation: planning, management, collection development, metadata consistence, quality control of content, and training. In another study by Wickham (2010), the roles of librarians in Institutional repository were identified as repository management and administration.

4.5 Awareness Levels of User Community on Library Scholarly Communication Services and Purpose of Institutional Repositories in Universities

The third objective of the study was to establish the awareness levels of user community on library scholarly communication services and purpose of institutional repositories in universities. The researcher sought to find out if the users were conversant with the services offered by library to support scholarly communication. Besides, the researcher also wanted to establish if the user community was familiar with the role of institutional repositories in universities.

Questionnaires were distributed to faculty heads and students at Kirinyaga, Embu and Machakos University. The respondents were asked to rate their level of awareness on the library copyright advisory service, hosting and preservation of digital content, and provision of scholarship support. On purpose of the institutional repository the respondents were required to rate their awareness on storage and archiving of digital scholarly content, provision of access to digital scholarly content, and dissemination of digital scholarly content.

4.5.1 Users awareness of library scholarly communication services

The researcher sought to establish the level of awareness of the user community at Kirinyaga, Embu, and Machakos universities on the following library scholarly communication services: copyright advisory services, hosting and preservation of digital scholarly content, and provision of scholarship support.

In terms of user awareness about library scholarly communication service on copyright advice at Kirinyaga University to the users by repository librarians, the faculty reported a moderate awareness at 3(23.08%). The student awareness level on copyright advisory service was varying as follows, 3(23.08%) were extremely aware, another 3(23.08%) were

moderately aware, 3(23.08%) were slightly aware and 1(7.69%) of students were not aware of the copyright advice provided by the library as shown by the figure 4.10 below.

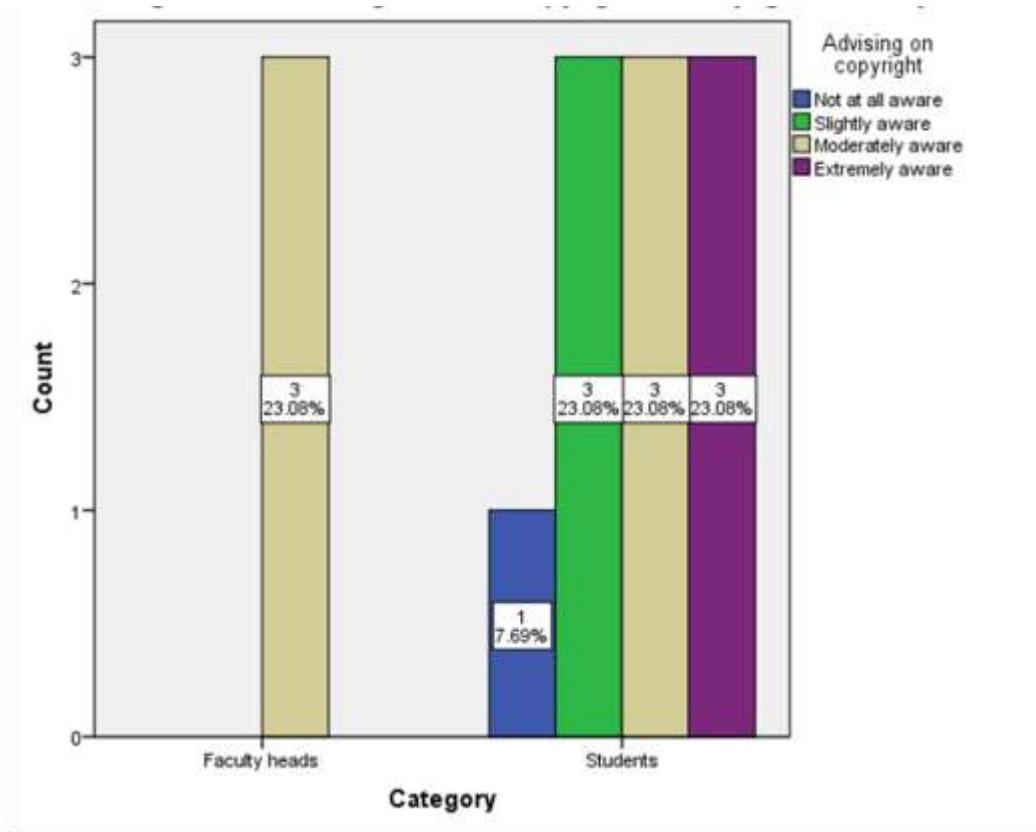


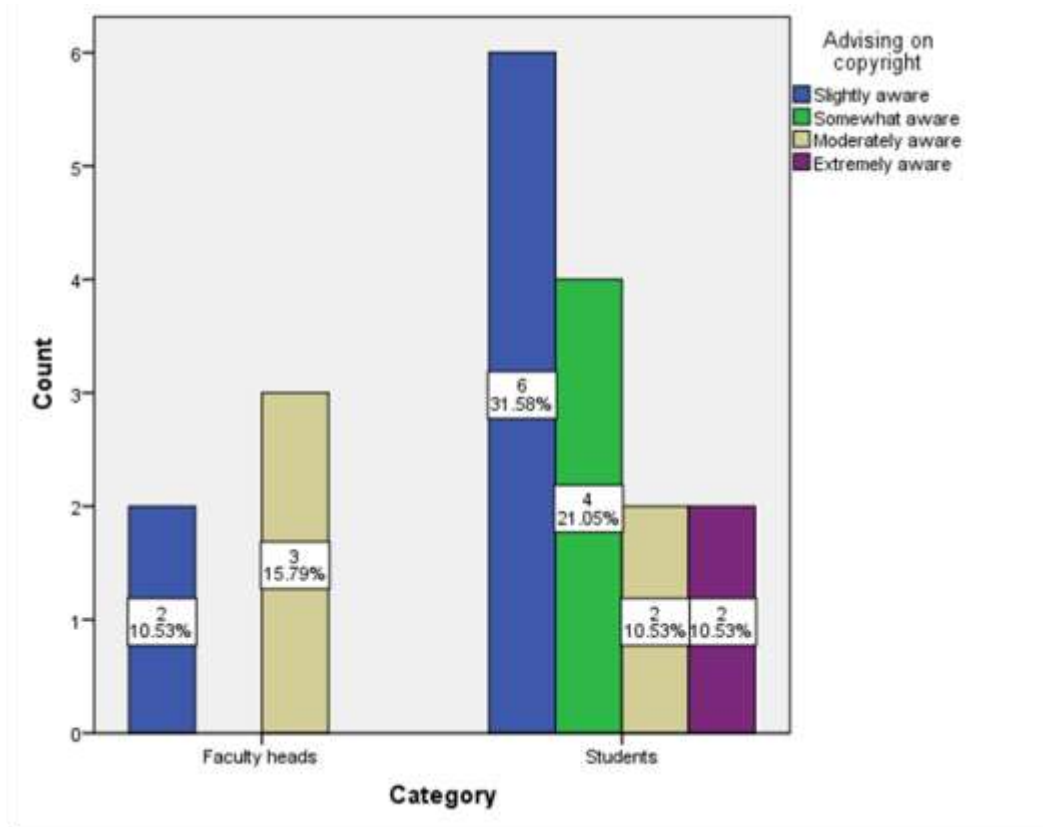
Figure 4.10 Advising User on Copyright at Machakos University

Source: Researcher (2018)

This findings implies that copyright advisory service have not been addressed fully by the institutional repository librarian hence the low percentage of awareness across the two category of respondent. The librarians should craft different ways of providing this service to increase the awareness levels.

At Embu University the researcher sought to establish the level of awareness in regard to copyright advisory services, Most of the faculty heads at 3 (15.79%) were moderately aware and another 2(10.53%) while slightly aware. The student respondent provided the following

finding, 2 (10.53%) of student were moderately aware, 6 (31.58%) of students were slightly aware, 4 (21.05%) somewhat aware, 2 (10.53) were moderately aware and 2(10.53%) were extremely aware of the library copyright advisory service provided by the repository librarians as represented by the figure



below.

Figure 4.11 Advising User on Copyright at Machakos University

Source: Researcher 2018

The researcher established that, the awareness of library copyright advisory at Embu University was moderate among the majority of the faculty heads, and a great number of the students were slightly aware. The librarian in this university should try to work various ways of creating awareness among the user community.

Finally the study sought to find out user awareness on copyright advisory service provided at Machakos University and the finding provided this figures. 3 (10.34%) of the faculty heads rated their awareness as slightly aware, somewhat aware 3(10.34%), moderately aware at

2(6.90%) and 1(3.45%) being not aware of the copyright advisory service in this University. The highest number of sampled students 9 (31.03%) were slightly aware, 6 (20.69%) somewhat aware, 3 (10.34%) moderately aware, and 2 (6.90%) not at all aware as shown in the figure 4.12.

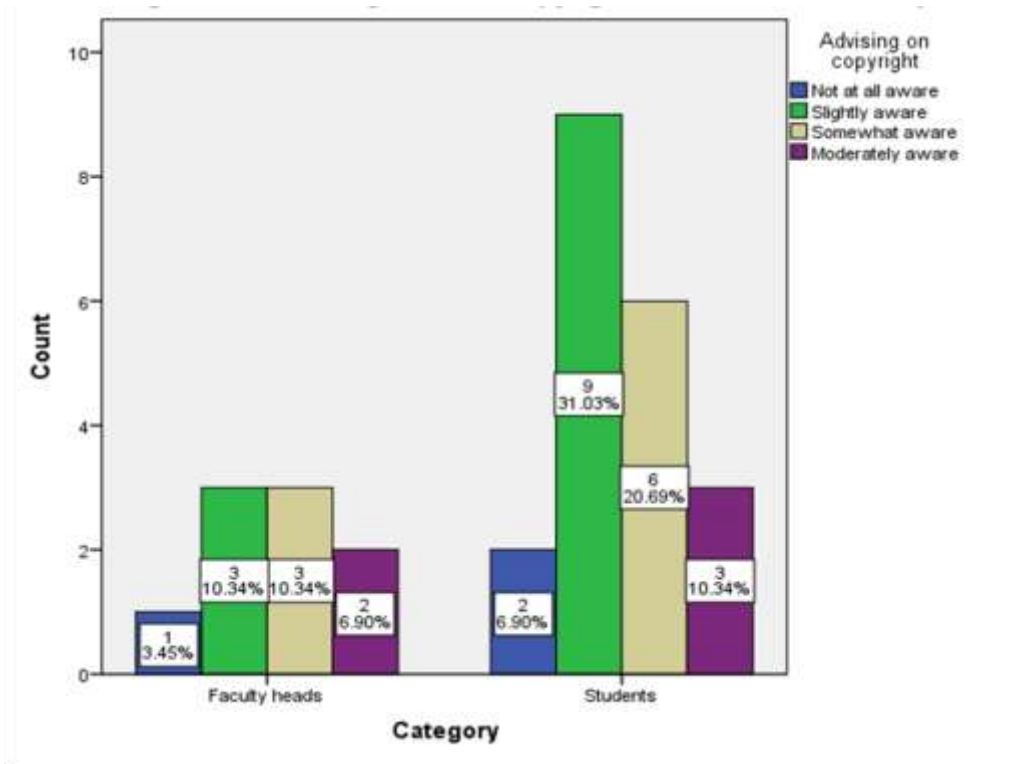


Figure 4.12 Advising Users on Copyright at Machakos University

Source: Researcher 2018

The study established that at Machakos University the level of awareness is low among the faculty heads and the student awareness level is moderate according to the findings.

Librarians have a major stake in educating library users on copyright issues. According to Macklin (2013) librarians educate faculty on importance of negotiating amendment of their journal agreements to allow for self-archiving. The members are encouraged to request the journals publishers to grant them rights to retain privileges of production, distribution,

publicly perform, and display their articles in any medium for non-commercial purposes; derivative rights; and fair use.

The researcher found out that, results from Kirinyaga, Embu, and Machakos universities show that faculty and students are moderately aware of the advisory services provided by the library. This could be attributed to the campaigns that universities take on issues of plagiarism. However the librarians should consider other ways of providing this service to improve the awareness.

4.5.2 Users awareness on library digital content hosting and preservation

The researcher also sought to know respondents rate of awareness on hosting and preservation of digital content by the institutional repository at Kirinyaga University library. The study provided the following finding; 2 (15.38%) of faculty heads were not aware of such a service, and 1(7.69%) were extremely aware. Majority of students at 3(23.08%) were slightly aware of the service, 2(15.38%) were somewhat aware, another 2 (15.38%) extremely aware, 1(7.69%) were moderately aware and 2(15.38% were not aware of digital content hosting and preservation service provided by Kirinyaga University institutional repository as shown below.

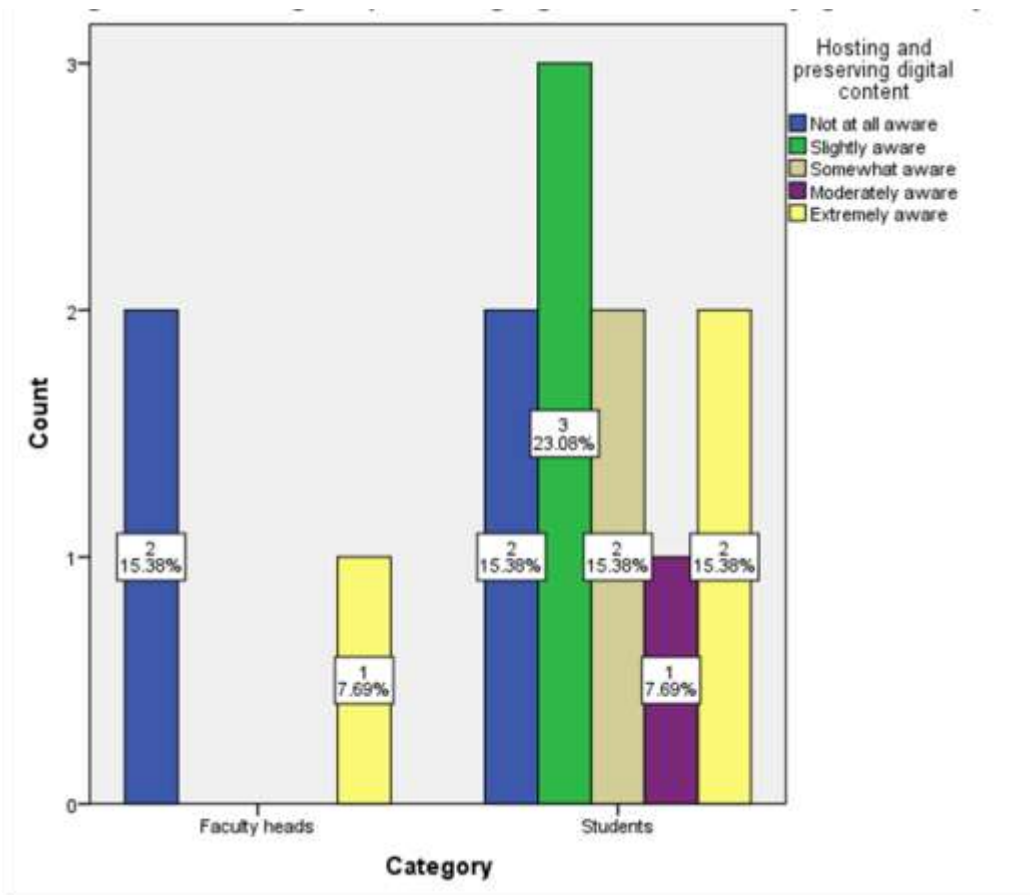


Figure 4.13 Hosting and Preserving Digital Content at Kirinyaga University

Source: Researcher (2018)

In terms of hosting and preservation of digital content done by Kirinyaga University library the researcher established that the service was not well known among the community of users.

The researcher sought to find out the rate of awareness of user on library digital content hosting and preservation service at Embu University. An equal number of faculty heads at 1(5.26%) were not at aware, 1(5.26%) were slightly aware, 1(5.26%) were somewhat aware, 1(5.26%) were moderately aware, and 1(5.26%) were extremely aware of the library digital content hosting and preservation service. On the other hand, 5(26.32%) of the students were slightly aware 5(26.32%) were somewhat aware, 2 (10.53%) were moderately aware, and 1

(5.26%) were extremely aware and an equal number 1(5.26%) were not aware of the availability of such a service as shown in figure 4.14.

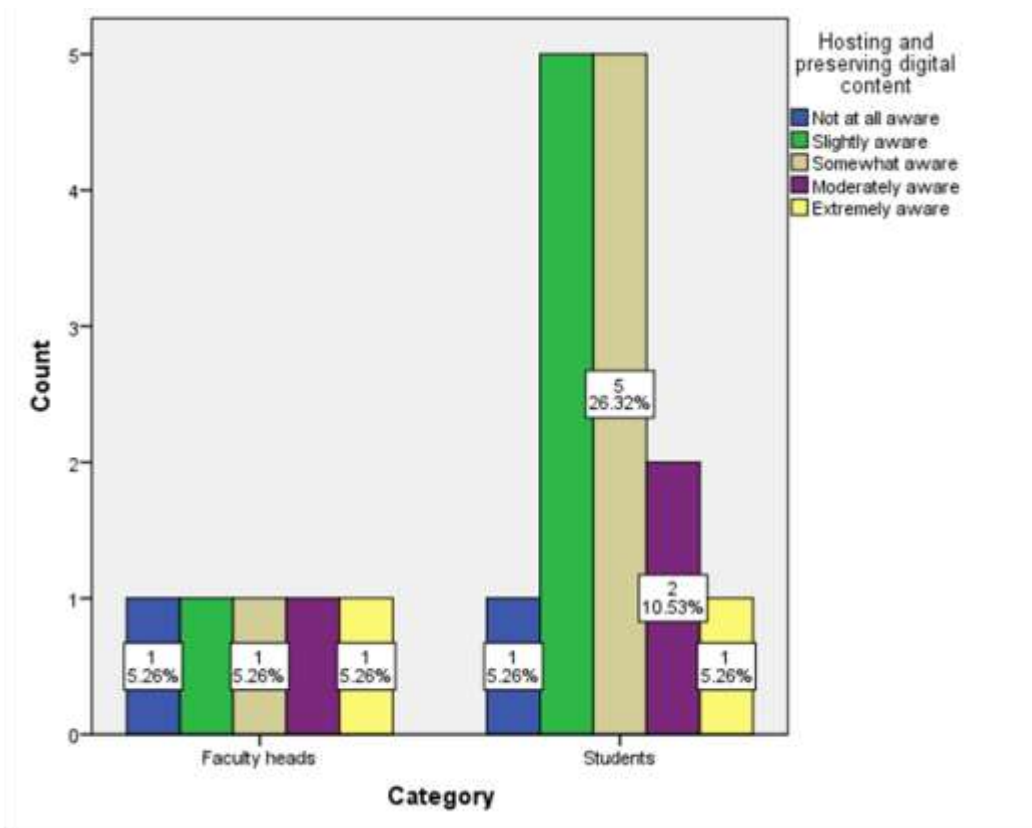


Figure4.14 Hosting and Preserving Digital Content at Embu University

Source: Researcher (2018)

The researcher established from the finding that the level of awareness of the library digital content hosting and preservation service at Embu University among the faculty heads and students was averagely low.

Finally the study sought to find out the rate at which users in Machakos University are aware of Institutional repository hosting and preservation of digital content. The result obtained are as follow, 1(3.45%) of faculty heads was not at all aware 2(6.90%) were slightly aware, 2(6.90%) somewhat, 2(6.90%) moderately aware, and 2(6.09%) were extremely aware. Most of the students (24.14%) were slightly aware, followed by 5(17.24%) who were slightly aware and 5(17.24%) who were extremely aware, 2(6.90%) were not aware and 1(3.45%)

were moderately aware of the institutional repository role of hosting and preserving digital content at Machakos University as depicted in figure 4.15

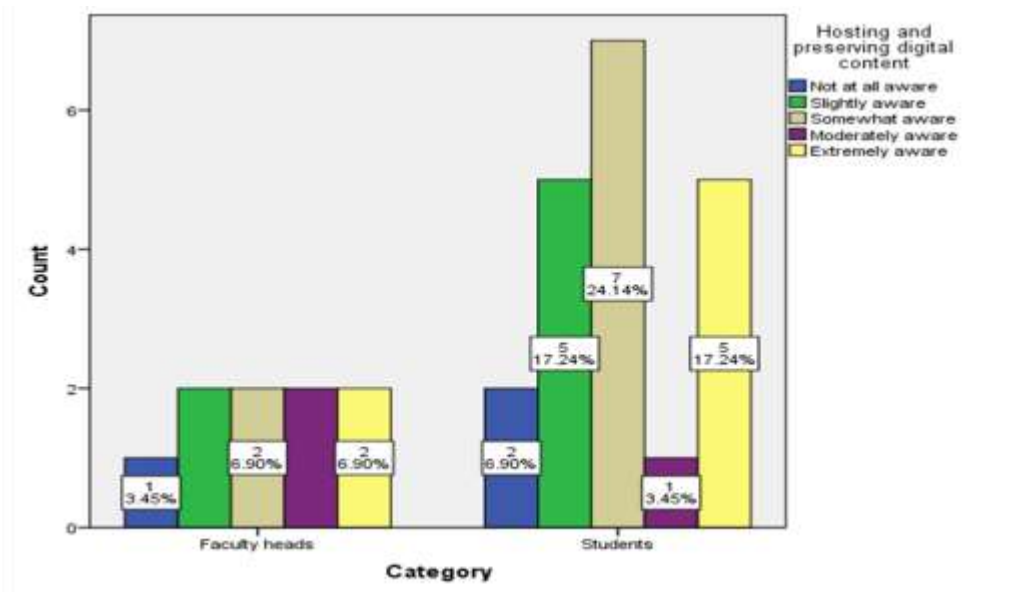


Figure 4.15 Hosting and Preserving Digital Content at Machakos University

Source: Researcher (2018)

The study established from the above finding that majority of faculty heads at Machakos University were aware of the library scholarly communication service of hosting and preserving digital content, the students were moderately aware of the service.

The researcher was keen to determine the core activity of institutional repository in hosting and preserving digital content in the selected Universities. Majority of faculty heads at Kirinyaga University were not aware of this, while most of the students were slightly aware. At Embu University, the awareness level among the faculty heads was moderate according to the finding. The Students respondent sampled were either slightly or somewhat aware. Majority of the faculty heads at Machakos were aware, while students were slightly aware. The level of awareness among the community of users on library digital content hosting and preservation service at the sampled universities could be concluded to be moderate based on the findings. A study by Halder and Chandra (2012) at Jadavpur University revealed similar

results, whereby the large numbers of users in the university had a conflict in awareness of the institutional repository in terms of digital content hosting and preservation. This means a lot need to be done to make user aware of the institutional repository role in hosting and preservation of digital content.

4.5.3 Users awareness on library digital scholarship support service

In terms of library digital scholarship support provided at Kirinyaga University the results indicate the awareness levels varied as follows; an equal number of the faculty heads 1(7.69%) were not aware, 1(7.69%) were slightly aware, 1(7.69%) extremely aware. The Student users findings are as follows; 3(23.08%) were slightly aware and 3(23.08%) were moderately aware, on the other hand 2 (15.38%) were not aware and another equal number 2(15.38%) were moderately aware as depicted in figure 4.16.

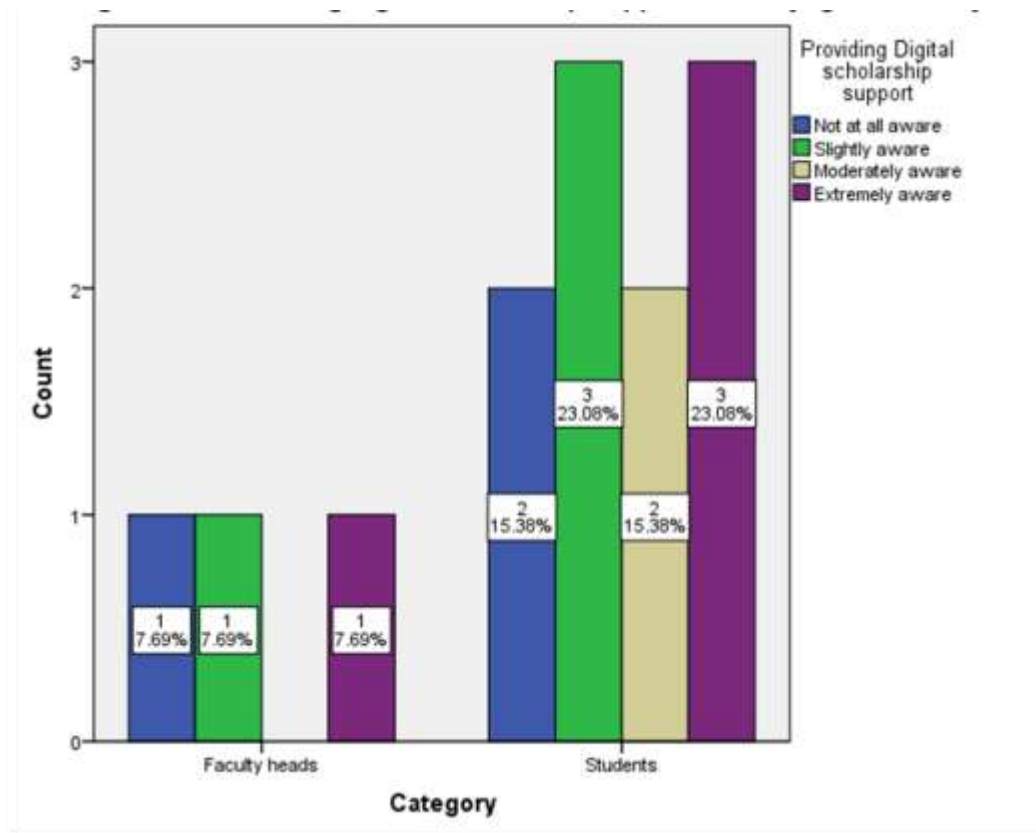
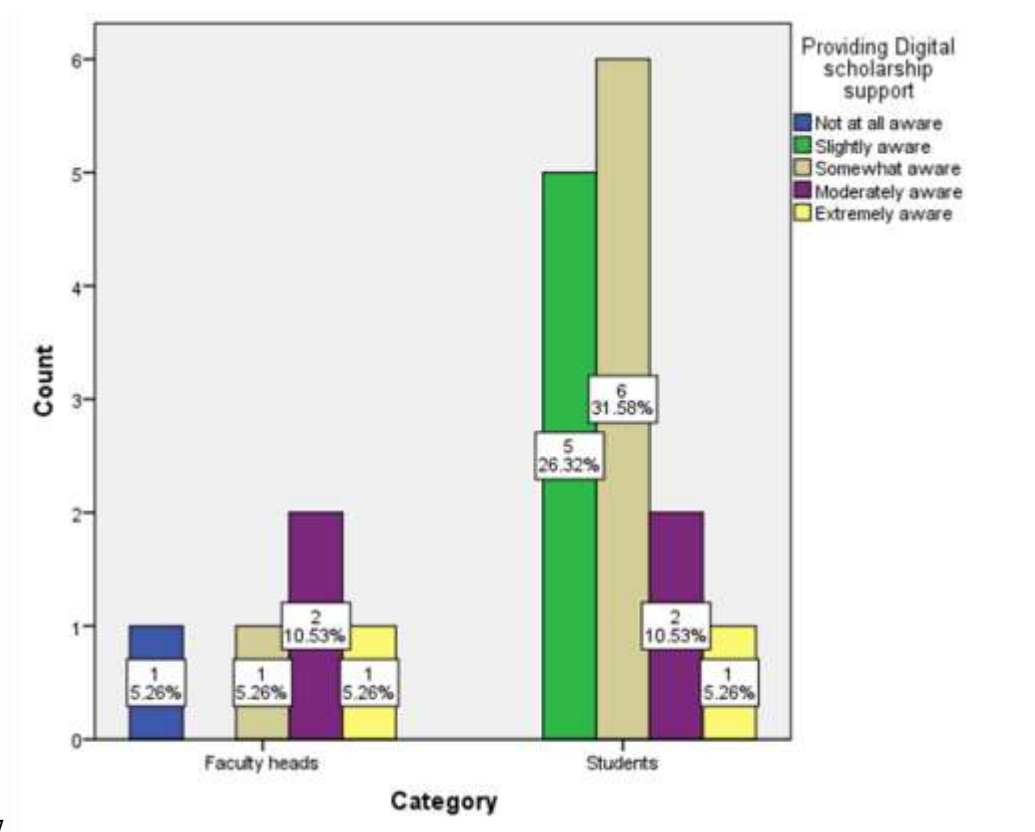


Figure 4.16 Providing Digital Scholarship Support at Kirinyaga University

Source: Researcher (2018)

The study established that user awareness of the library scholarly communication service on digital scholarship support is low among the faculty heads and the students at Kirinyaga University.

Regarding Embu University, a slightly higher number of faculty heads at 2,(10.53%) were moderately aware of digital scholarship support service provided, while 1 (5.26%) of the faculty heads were not at all aware, somewhat aware at 1(5.26%) and extremely aware at 1(5.26%). Most of the students 6 (31.58%) were however somewhat aware, 5(26.32%) slightly aware, 2 (10.53%) moderately and 1 (5.26%) extremely aware as shown in figure



4.17

Figure

4.17 Providing Digital Scholarship Support at Embu University

Source: Researcher (2018)

The study established that, there was awareness of digital scholarship support provided by the library user community at Embu University; however, the level of awareness was higher among the faculty heads as compared to the students.

In terms of institutional repository provision of scholarship support at Machakos University the finding provided the following figures; Faculty heads were moderately aware at 3(10.71%) , somewhat aware at 3(10.71%) and slightly aware at 2(7.14%) were and 3.57% were not aware. The students mirrored similar views with 5(17.86%) being somewhat and 5(17.86%) being moderately aware, 4(14.29%) slightly aware, 2(7.14%) were extremely aware and 3(10.71%) were not aware as shown in the figure 4.18.

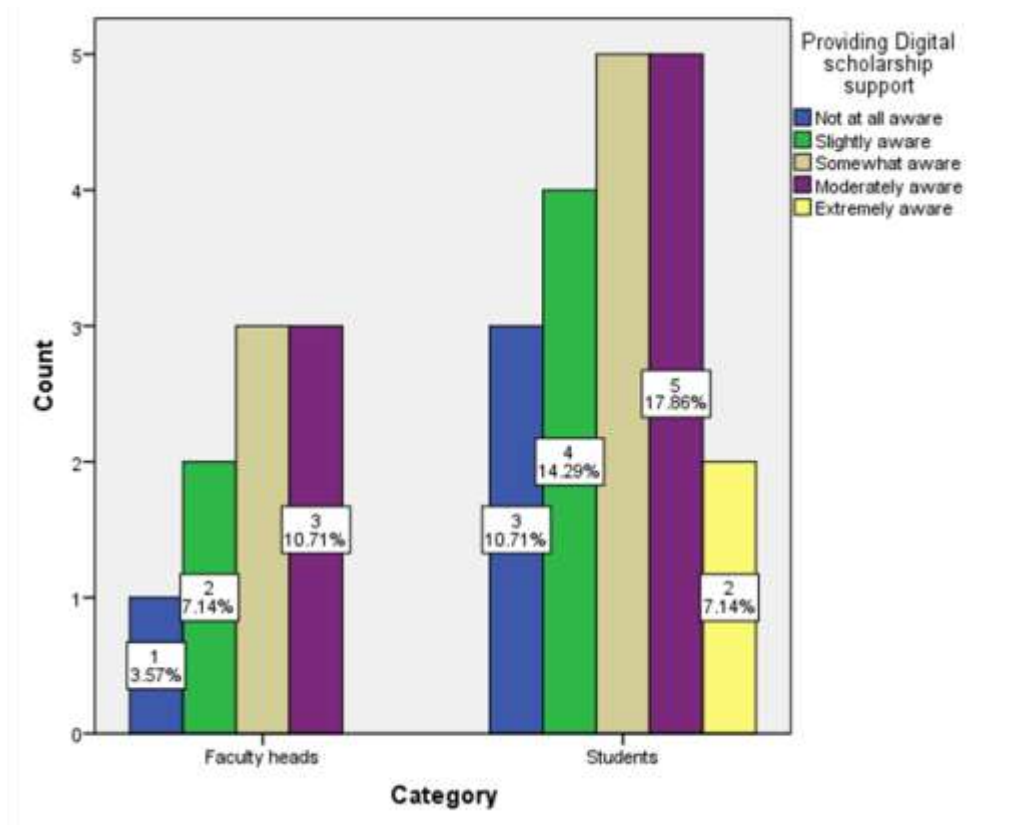


Figure 4.18 Providing Scholarship Support at Machakos University

Source: Researcher (2018)

The researcher established that the level of awareness of library digital scholarship support service among the faculty heads and student at Machakos University was low.

The awareness level among the faculty heads at Kirinyaga University on library digital scholarship support services was even. Majority of the students were either slightly aware or extremely aware. At Embu University, majority of faculty heads were moderately aware, whereas the students were somewhat aware. A higher number of faculty heads at Machakos University were either somewhat or moderately aware, and most students were either somewhat or moderately aware. Across the universities, the awareness levels of library digital scholarship support services awareness were neither high nor low. This could be interpreted to mean that the user community is not well versed with the digital scholarship services provided by the institutional repositories.

4.5.4 Awareness Levels of User Community on Purposes of Institutional Repositories in Universities

The researcher sought to know the level of user community awareness on purposes of institutional repository in the selected universities consequently, the sampled respondents from Kirinyaga, Embu, and Machakos universities were required to rate their awareness about the purpose of institutional repositories in their universities. The institutional repository purposes singled out for rating included storage and archiving of scholarly content, provision of access to digital scholarly content, and dissemination of the digital scholarly content.

In terms of storage and archival purposes, the faculty heads were moderately aware at 3(23.08%). Students 3(23.08%) were moderately aware, 2(15.38%) were not aware, and 1(7.69%) were slightly and 1(7.69%) were somewhat aware as shown in figure 4.19.

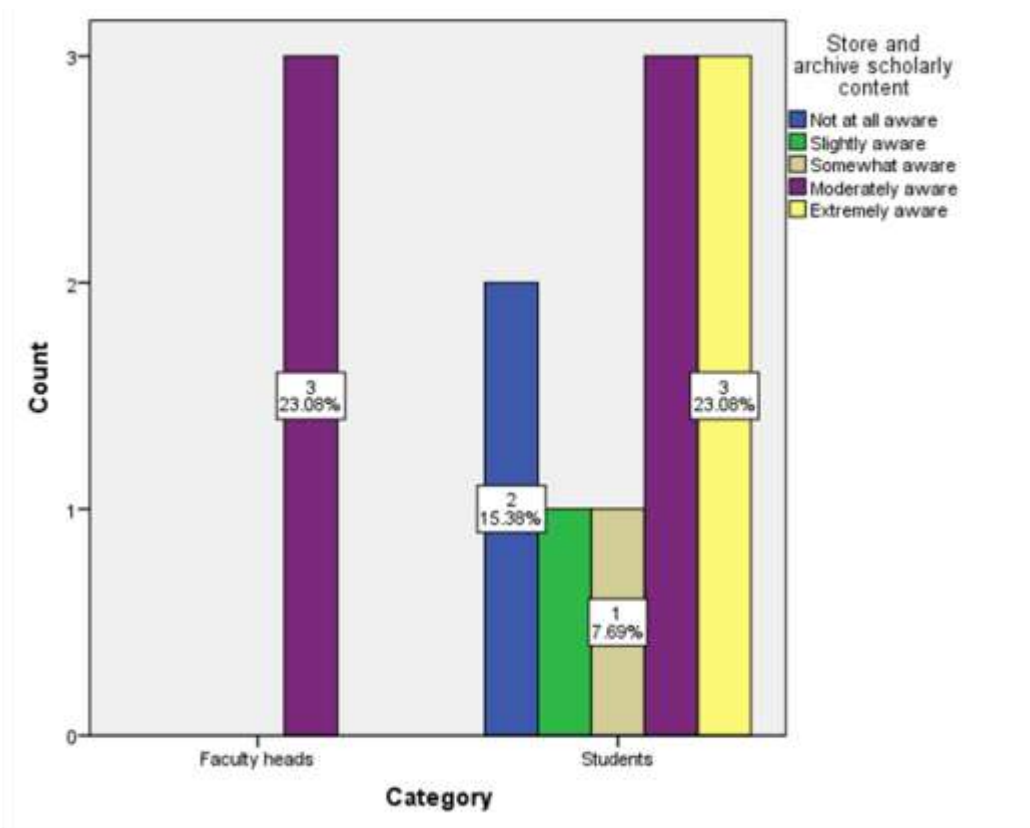


Figure 4.19 Store and Archive Scholarly Content at Kirinyaga University

Source: Researcher (2018)

The study found out that Kirinyaga University faculty heads were aware at 3(23.08%) of the storage and archiving purposes of the institutional repositories. Student provided an average moderate awareness level of (38.46%).

In terms of storage and archival of scholarly content at Embu University the researcher establish that, most of the faculty heads 2(10.53%) at were somewhat aware, 1(5.26%) slightly aware, 1(5.26%) were moderately aware and another 1(5.26%) were not aware of the institutional repository purpose of storing and archiving digital content at Embu University. Nevertheless, 5(26.32%) of the students were moderately aware, 2(10.53%) were slightly aware, and 10.53% were both were somewhat aware and 2(10.53%) were extremely aware. Finally 5.26% of the student were not aware at all as figure 4.20 summaries.

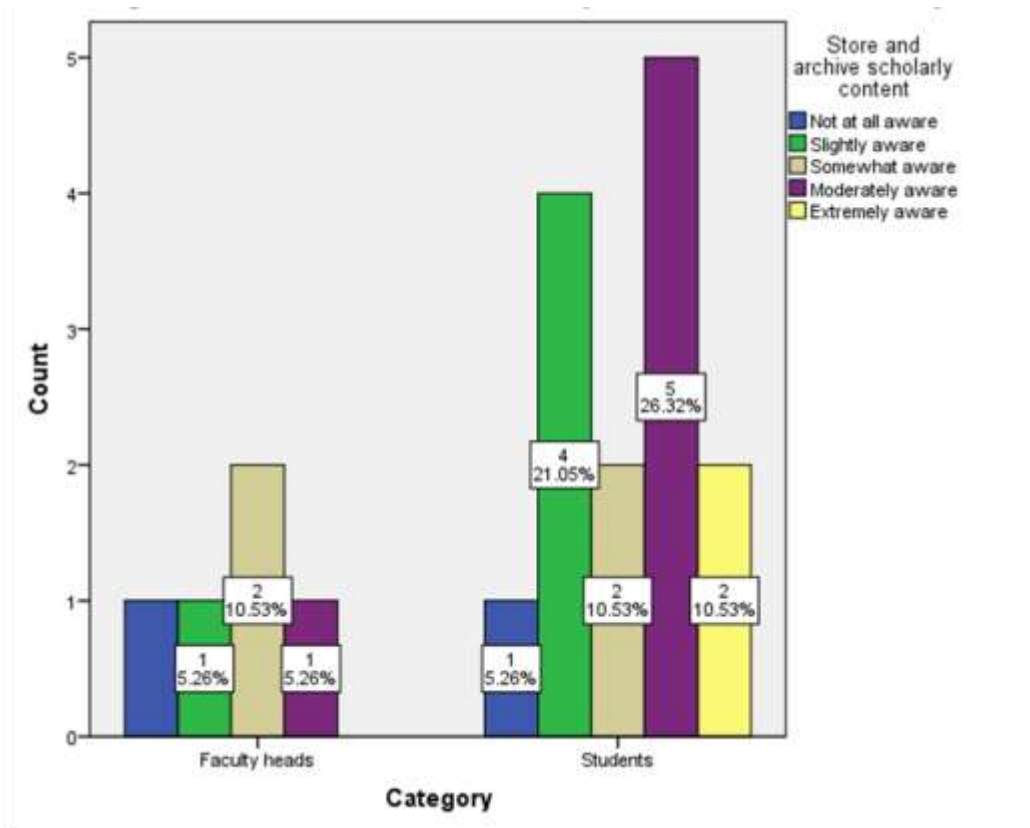


Figure4.20 Store Archive Schorarly Content at Embu Univesity
Source: Researcher (2018)

The researcher established that the level of awareness on storage and archival purpose of institutional repository of faculty heads at Embu University at,5(26.31%) faculty heads sampled the awareness level was interpreted to be low based on statistics given above. Among the students the awareness is a bit higher since 12(68.43%) gave a average response of being aware against 1(5.26%) who were not aware.

At Machakos University the researcher established the following findings regarding institutional repository storage and archival purposes. According to the results, 4(13.79%) of faculty heads rated their awareness as somewhat, 2(6.90%) rated their awareness as either slightly aware or 2(6.90%) as moderately aware, and 1(3.45%) rated their awareness as not at all aware. Nevertheless 7(24.14%) of student rated their awareness as moderate and another

7(24.14%) were extremely aware, 4(13.79%) rated their awareness as slightly aware, and 2(6.90%) rated their awareness as somewhat aware

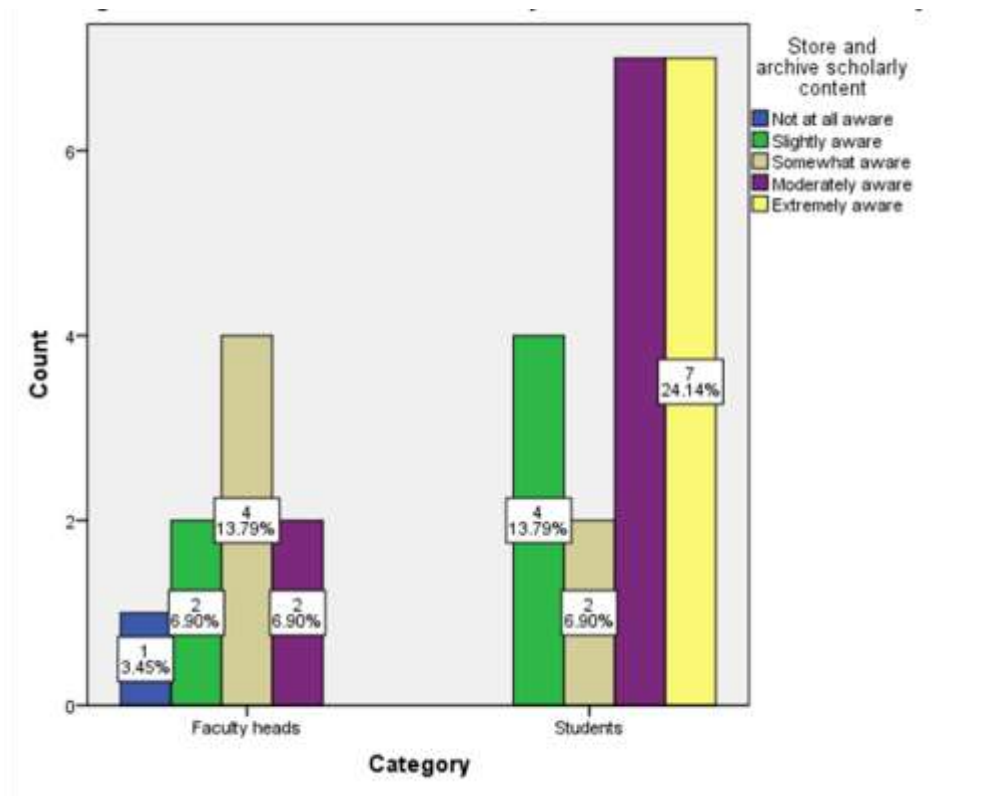


Figure 4.12 Store and Archive Scholarly Content at Machakos University

Source: Researcher (2018)

The researcher established that the awareness level on storage and archiving of digital content purpose of digital content was not well known among the faculty heads at Embu University. Owing to the fact that out of 9(31.04) faculty members 7(27.59%) were either not at aware, slightly aware or somewhat aware, and moderately aware. Student’s findings presented an average of moderate awareness since non reported not to be aware of this service.

The level of awareness of community of users at Kirinyaga University on important role of storage and archiving of intellectual output was moderate, in Embu the awareness among faculty heads was average and among the students awareness level was moderate. At Machakos the faculty heads awareness were also slightly aware, while the students awareness was moderate. Overall majority of faculty awareness was slightly, whereas for students it was

moderate. This can be interpreted to mean that the user community awareness level was fair. Smith (2008) maintains that the chief role of institutional repository is to preserve intellectual output of institutions and to archive faculty e-journal publications. The publications face a danger of being forever lost in case of e-journal which publications are not published it ceases to exist. The management should fully support the institutional repository concept through creating awareness to the community of users.

4.5.5 Users Awareness on IR Content Access Purposes

The study sought to find out the awareness of faculty heads and students sampled at Kirinyaga University on institutional repository role of providing access to digital content as depicted in Figure 4.22. 2(15.38%) of faculty heads were moderately aware of the institutional repository purpose of providing access to digital content, and 1(7.69%) were somewhat aware. On the other hand, 4(30.77%) of students were not aware at all, 4(23.08%) were extremely aware, 2(15.38%) were slightly aware, and 1(7.69%) were extremely aware.

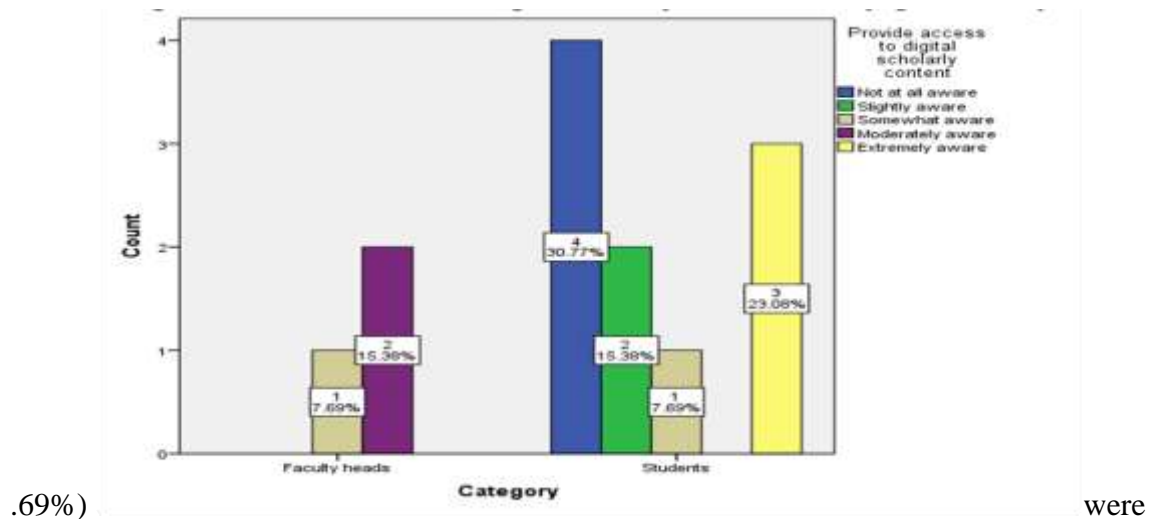


Figure 4.22 Provide Access to Digital Scholarly Content at Kirinyaga University

SourceResearcher (2018)

The study established that, faculty heads 2(15.38%) at kirinyaga University were aware of the important purpose of the institution repository of providing access to digital scholarly content. The students had a majority awareness level of 6(46.13%) against 4(30.77%) who were not aware at all. The finding can be interpreted to mean Kirinyaga level of awareness on institutional repository purpose of providing access to digital scholarly content is high among the two category of respondents.

At Embu University the study provided the following finding; 3(15.79%) of faculty heads were somewhat aware, and 2(10.53%) were moderately aware. However, 6(31.56%) of the students were moderately aware, 5(26.32%) were somewhat aware, 2(10.53%) were not at all aware and 1(5.26%) were extremely aware as reported in figure

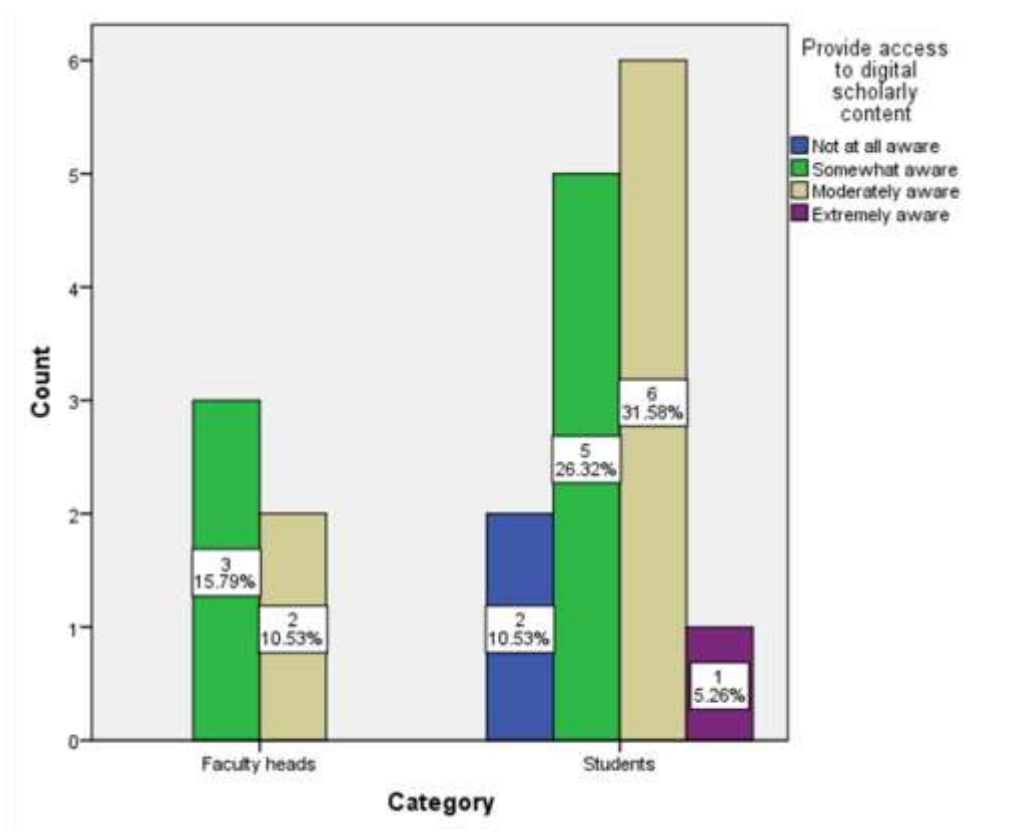


Figure 4.23 Provide access to Digital Scholarly Content at Embu University

Source: Researcher (2018)

The study established that the level of awareness of the institutional repository purpose of providing access to digital content at Embu University by faculty heads could be rated unsatisfactorily as supported by this finding, 3(15.79%) of faculty heads were somewhat aware and 2(10.53%) were moderately aware. Students level was also not better because out of 14(73.69%) students 6(31.58%) were moderately aware and 1(5.26%) were extremely aware, whereas 5(26.32%) were somewhat aware and 2(10.53%) were not aware at all.

On the other hand Machakos University provided the following finding in regard to user awareness on institutional repository content access purposes. 3(10.34%) of faculty heads at were slightly aware, 2(6.90%) were somewhat aware, 2(6.90%) were moderately aware whereas 1(3.45%) were not at all aware. Moreover, a great percent 10(34.48%) of students were somewhat aware, 5(17.24%) were moderately aware, 4(13.79%) were slightly aware, and 1(3.45%) were extremely aware as summarised in figure 4.24.

The Researcher established that institution repository is the gateway to digital scholarly content of an institution and according to the finding from the figure above from Machakos university, it can be concluded the level of awareness is average among the two category of users sampled.

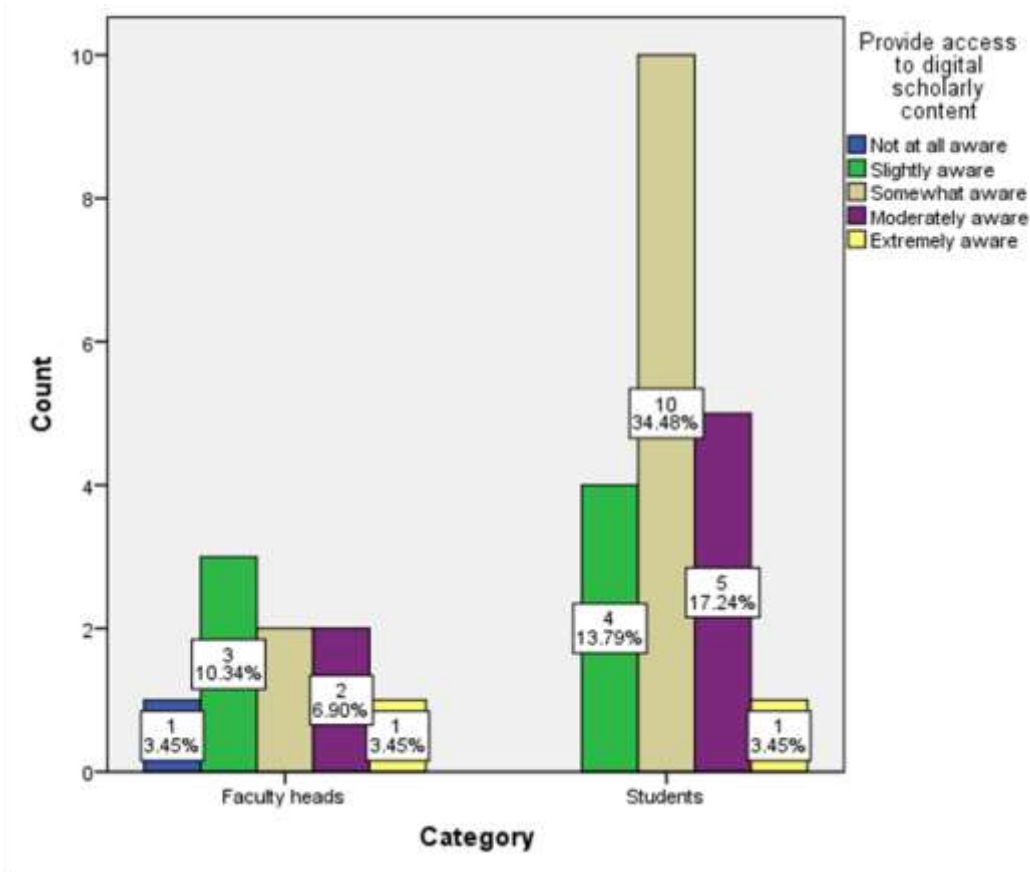


Figure 4.24 Access to digital Scholarly Content at Machakos University

Source: Researcher (2018)

Institutional repository does not only store and archive digital content, but they provide access to the content. Smith (2008) reports that institutional repository provide immediate and continues access to the content for articles in commercial publications are made available after a given period raging from six to three years after publication, and the access is either in site or remotely or both. The researcher established that, the awareness of this role by faculty heads and the student in the selected university can be rated to be average; this means a lot should be done to improve on the stated levels.

4.5.6 User awareness on IR content dissemination purposes

The researcher sought to establish whether the purpose of institutional repository to facilitate dissemination of digital scholarly content is well embraced at kirinyaga University. According to figure 4.25 faculty heads at 3(23.08%) were moderately aware of the institutional repository purpose of disseminating digital content. 4(30.77%) of the students were also moderately aware, 3(23.08%) were slightly aware and 3(23.08%) were extremely aware.

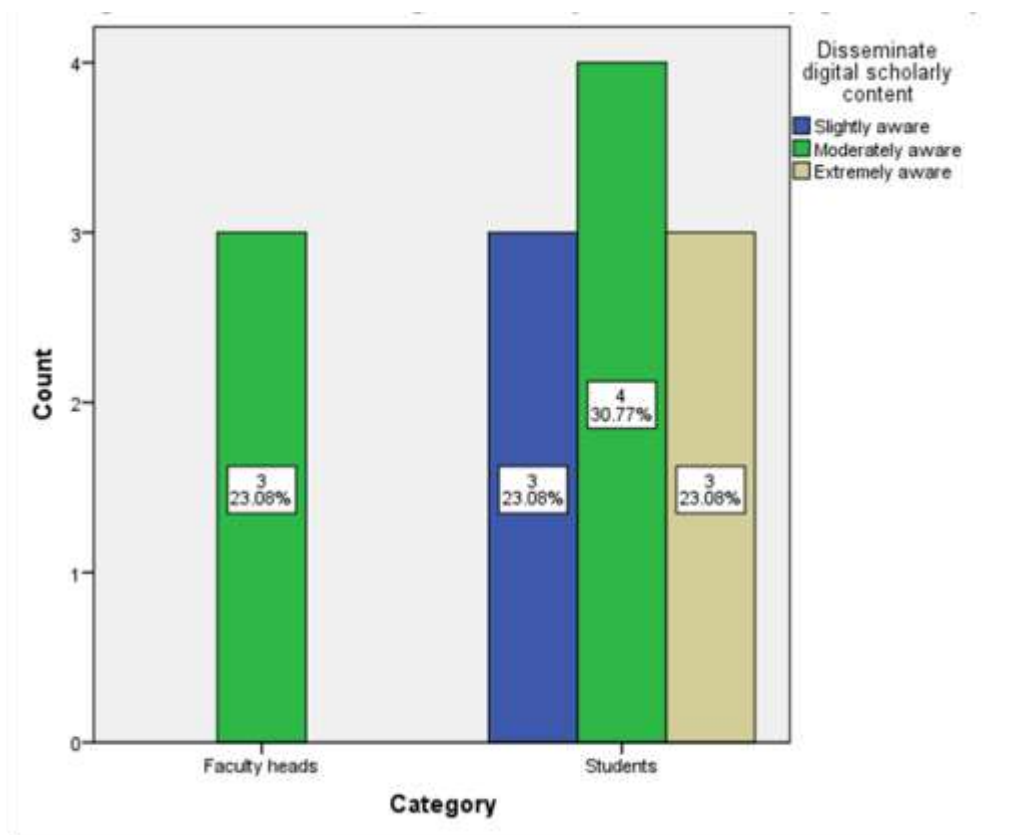


Figure 4.25 Disseminate Digital Scholarly Content at Kirinyaga University

Source: Researcher (2018)

The study found out that the level of awareness on the purpose of institutional repository to disseminate digital content was high among the faculty heads 3(23.08%), and students 7(53.85%), at Kirinyaga University.

On the other hand the following findings were obtained from Embu University in regard to dissemination of digital scholarly content. 2(10.53%) of faculty heads were somewhat aware, 1(5.26%) were slightly aware, 1(5.26%) were moderately aware and 1(5.26%) were extremely aware. More so, 4(21.05%) of students were slightly, 4(21.05%) were extremely aware, 2(15.79%) were somewhat aware, 2(10.53%) were not aware at all, and 1(5.26%) were moderately aware as shown in figure 4.26.

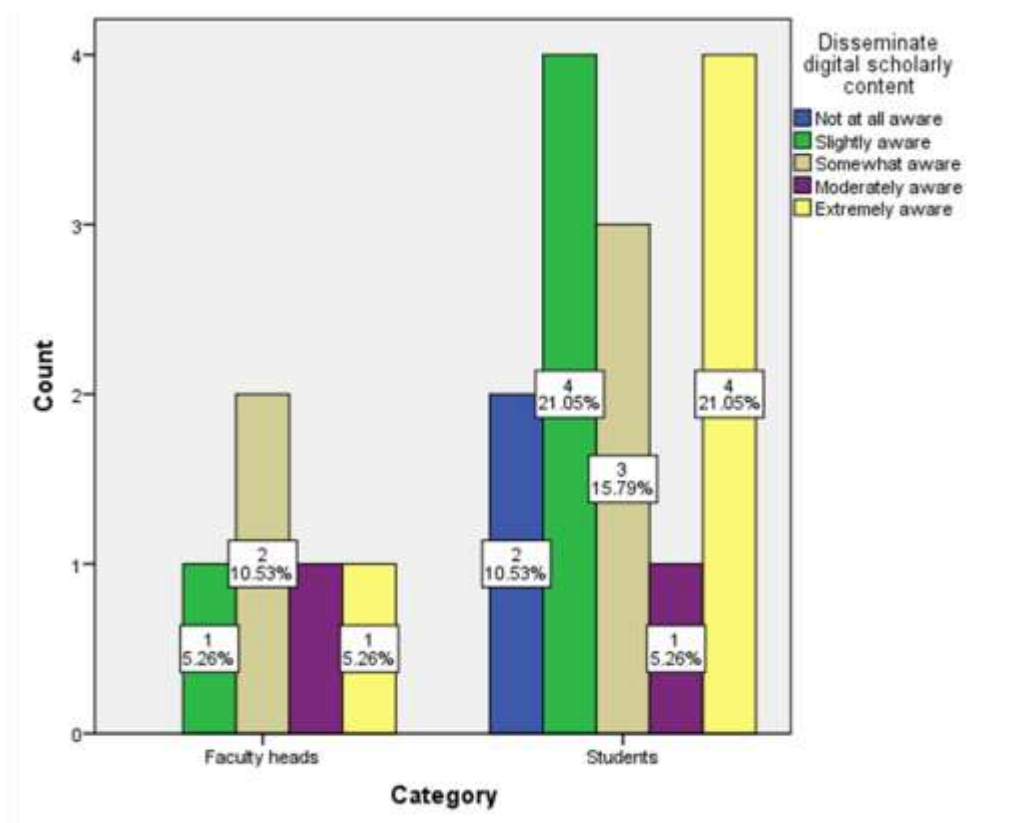


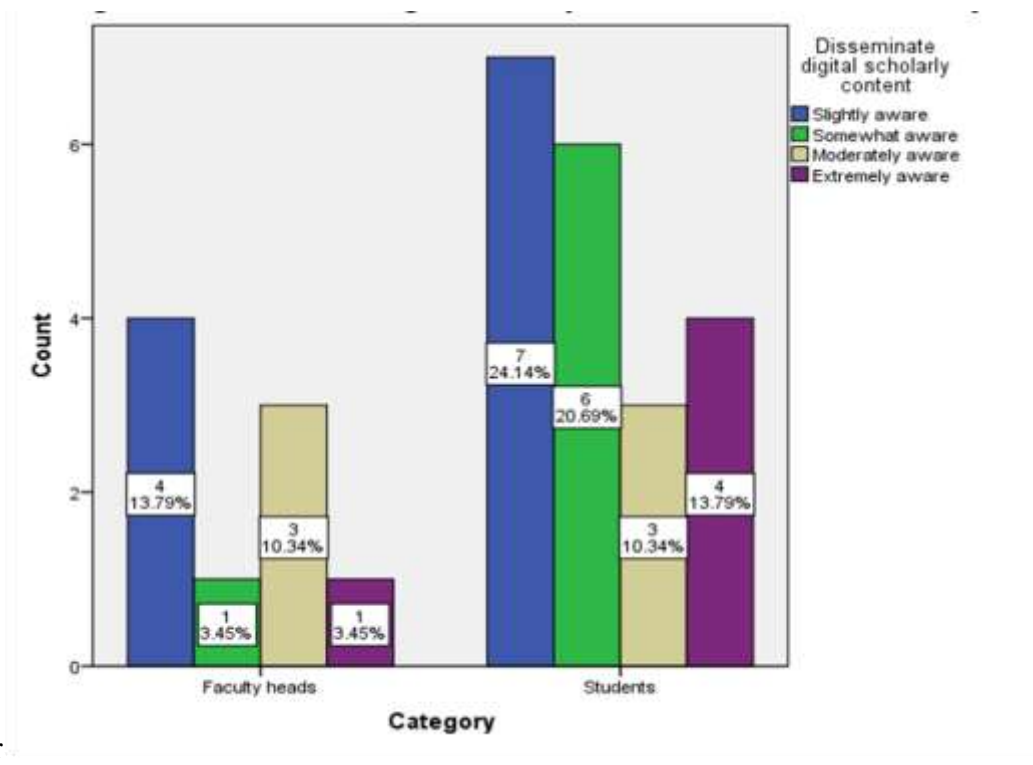
Figure 4.26 Disseminate Digital Scholarly Content at Embu University

Source: Researcher (2018)

The researcher established that from the finding the number of the library users at Embu University who could be categorized to be aware of institution repository purpose of disseminating digital content was generally low.

In term of Machakos University the researcher sought to establish whether Institution repository spread abroad the digital content of the institution. According to the findings in

figure 4.27 a great percent 4 (13.79%) of faculty heads were slightly aware of this fact, followed by 3(10.34%) who were moderately aware, and another percent1 (3.45%) that was somewhat aware and 1(3.45%) which was extremely aware. 7(24.14%0 of the students were slightly aware, 6(20.69%) were somewhat aware, 4(13.79%) were extremely aware, and 3(10.34%



wer

Figure 4.27 Disseminate digital scholarly content at Machakos University
Source: Researcher (2018)

The researcher established that dissemination of digital content purpose of institution repository was not largely known within the faculty heads at Machakos University for out of 9(31.03%) faculty heads 5(17.24%) awareness level could be rated average. The students posted similar results whereby 13(44.82%) of the 20(68.96%) students sampled seemed to be slightly aware. A study by Cullen and Chawner (2009) established that academics institutions were frustrated by the traditional channels of disseminating research findings, which they felt were not reaching a wider audience. The academics favoured institutional repository that

advocates for open access, this made their work not only freely available but also widely disseminated to a wider audience.

The user community at Kirinyaga University were moderately aware of the content dissemination role of the institutional repository. At Embu University the opinion was divided with majority of faculty heads feeling they were somewhat aware and students were either slightly or extremely aware. At Machakos University majority of the faculty heads and students were slightly aware. Overall, the majority of user community were slightly aware of the dissemination of digital content purpose of institution repository. This suggests that the level of awareness need to be worked upon.

4.6 User Perception of Institutional Repository

The researcher was keen to determine the user perception towards the institutional repositories for scholarly communication in universities in Kenya. To achieve the objective, a questionnaire was distributed to a sampled target population from Kirinyaga, Embu, and Machakos universities. The respondents were asked their perception towards adoption of institutional repositories, depositing of scholarly content with institutional repository, and archiving scholarly content with institutional repository.

4.6.1 Adoption of Institutional Repository

The study established the following finding regarding user adoption of institutional repository at Kirinyaga University. The faculty heads at 3(23.08%) generally agreed on adoption. The student who strongly agreed was at 3(23.08%) and a similar percent 3(23.08%) of students agreed. On the other hand 2(15.38%) strongly agreed 1(7.69%) agreed, 1(7.69%) strongly disagreed, and 1(7.69%) was neutral as shown in figure 4.28.

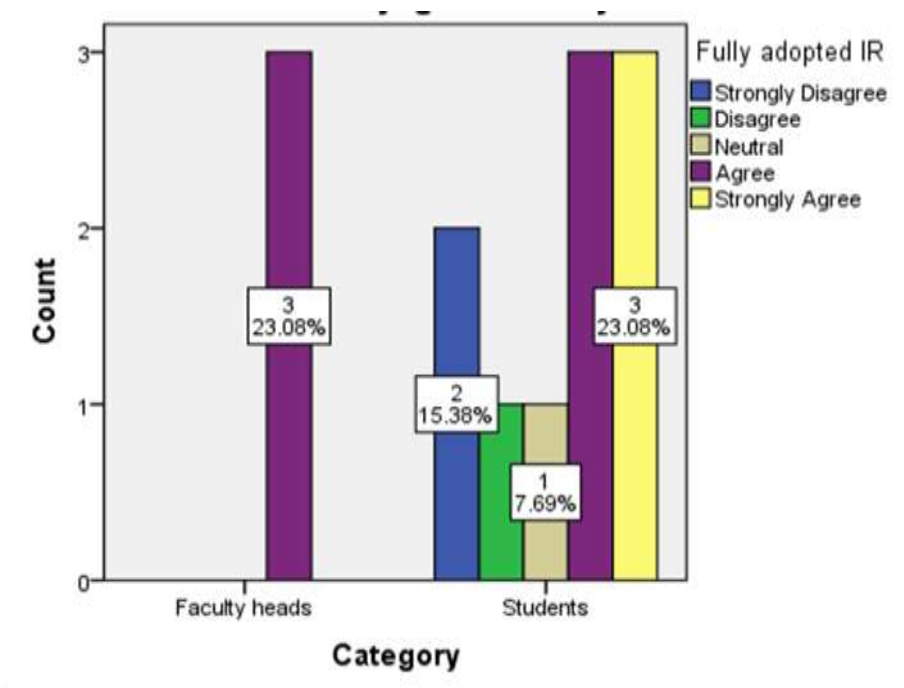


Figure 4.28 Users Adoption of Institutional Repository at Kirinyaga University

Source: Researcher (2018)

The researcher established that all the 3(23.08%) faculty heads sampled at Kirinyaga University had fully adopted the use of institution repository. Majority of the students at 6(61.54%) of the 10(76.92%) students sampled agreed to the adoption of institutional repository.

In regard to Embu University institutional repository user perception on adoption, the researcher gathered the following finding; majority of faculty heads 2(10.53%) were neutral on their support of the institutional repository by depositing their research output, and 1(5.26%) of the faculty heads strongly disagreed, 1(5.26%) disagreed, 1(5.26%) agreed. A great number of students 5(26.32%) agreed to supporting the institution repository, 4(21.05)% students disagreed, 2(10.53)% strongly agreed another percentage at 2(10.53)% was neutral and 1(5.26%) strongly disagreed, and figure 4.29 summaries the findings.

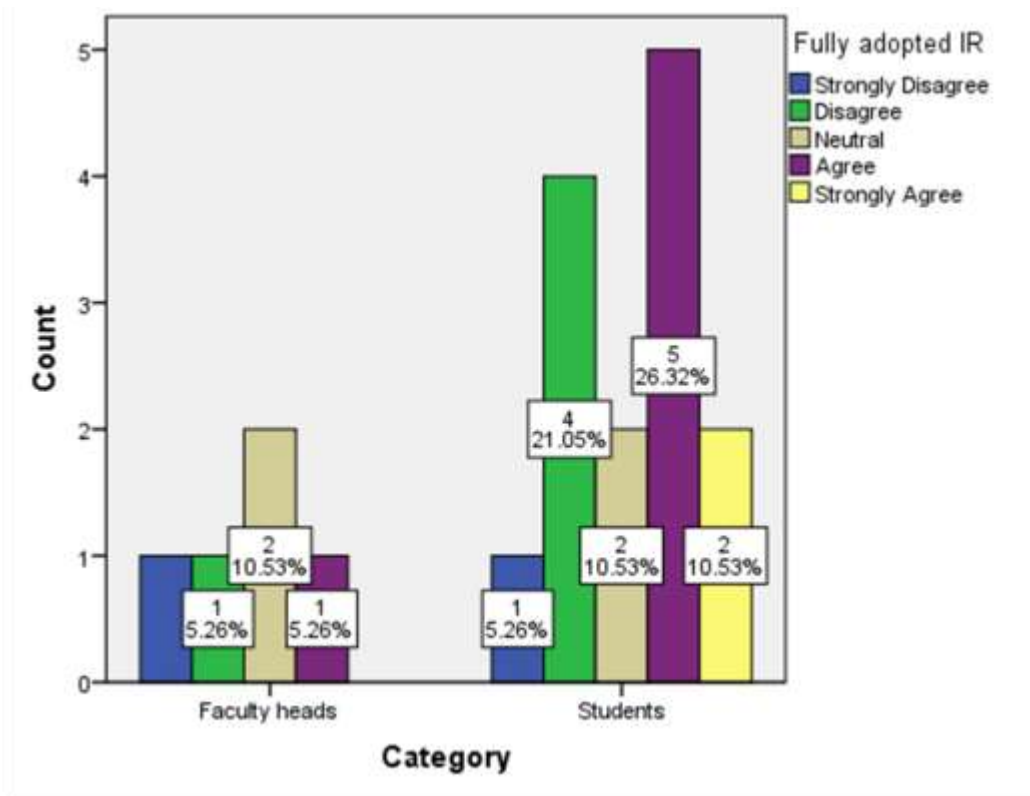


Figure 4.29 Users Adoption of Institutional Repository at Embu University

Source: Researcher (2018)

The study established that the faculty heads at Embu were not very support of institutional repository through depositing their research content as shown by the findings of 2(10.53%) of the faculty head reported a neutral position. Students perception was average since some supported adoption at 7 (36.85%) and another similar number were unsupportive at at 7 (36.85%). The overall perception level according to the finding is rated average at Embu University.

The researcher sought to know how user perceives adoption of the institutional repository at Machakos University. Majority of faculty heads at 4(13.79%) were neutral on adoption of institutional repository, 2(6.90%) agreed and another 2(6.90%) disagreeing 1(3.45%) also strongly disagreed. The students also provided the following findings; 7(24.14%) agreed,

7(24.14%) strongly agreed on adoption of institutional repository, 4(13.79%) disagreed, and 2(6.90%) were neutral. Figure 4.30 summaries these findings.

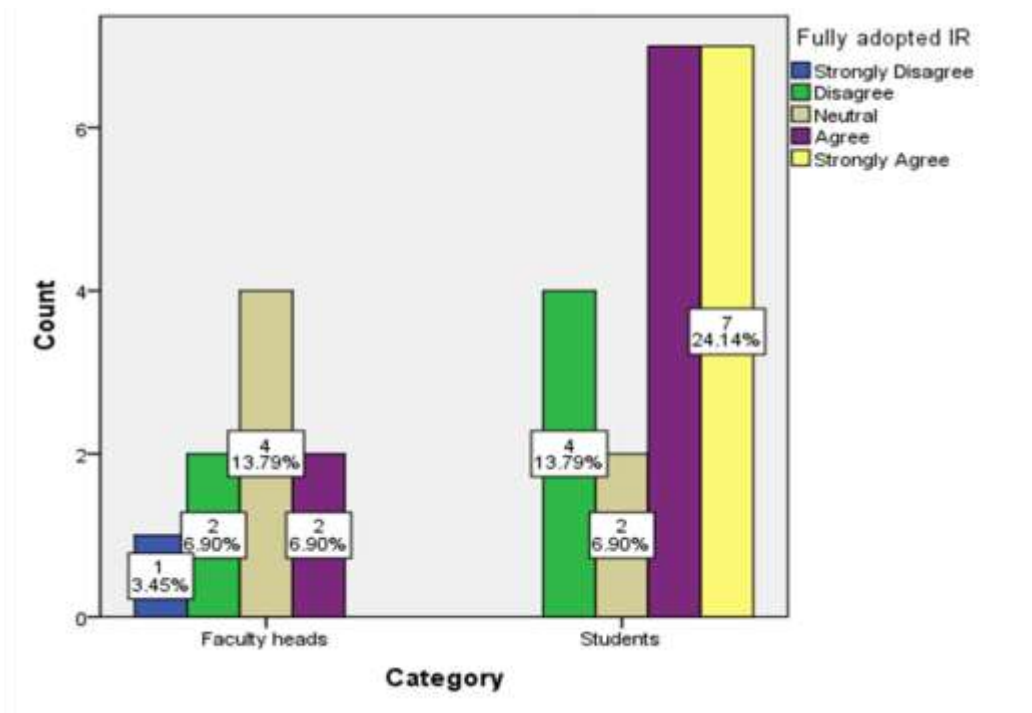


Figure 4.30 Users Adoption of Institutional Repository at Machakos University
Source: Researcher (2018)

In terms of adoption at Machakos University, majority of the faculty heads perception was low at 6(24.14%) and only 2(6.90%) of all sampled faculty heads at 9(31.04) agreed. On the contrary, adoption of institutional repository was high among the students because majority of them at 14(48.28%) agreed and only a smaller percent at 6(20.69%) were not supportive of institutional repository adoption.

Adoption and acceptance of the institutional repository by users is the greatest challenge for institutional repository implementation. Failure of the faculty to adopt institutional repository hinders the growth of the repository (Abrizah, 2010; Singeh et al. 2013). The repository librarian needs to do more advocacies to enhance user perception towards institutional repository adoption.

4.6.2 Users Acceptance of Institutional Repository Digital Archiving

The Researcher sought to find out the level of user acceptance of institutional repository concept. The sampled respondents at Kirinyaga University were asked of their perception on archiving scholarly content with institutional repository and they provided the following finding; 3(23.08%) of the faculty heads agreed on archiving scholarly content with institutional repository. students agreed at 4(30.77%), 3(23.08%) disagreed and another 3(23.08%) strongly agreed as summarised on figure 4.31.

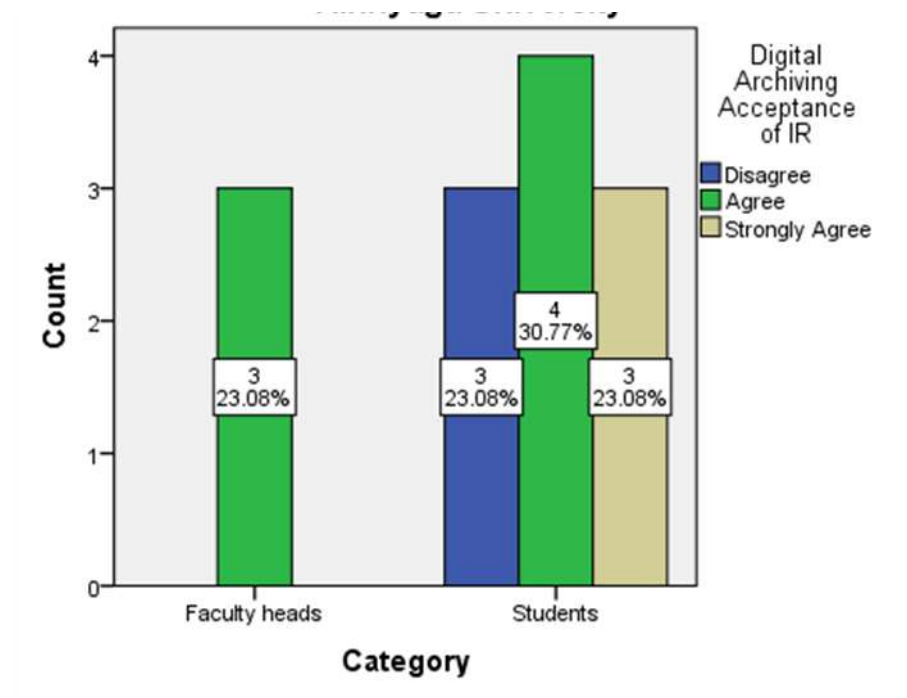


Figure 4.31 User Acceptance of IR Digital Archiving at Kirinyaga University

Source: Researcher (2018)

The study established that the user community sampled at Kirinyaga University were positive on archiving of scholarly content with institutional repository. This is evidenced by the faculty heads at 3 (23.08%) positive response of agreeing to digital archiving with the institution repository. Students response was fair since the ones who agreed were the majority at 4(30.77%) against 3(23.08%) who disagreed. The user acceptance at Kirinyaga University of institutional repository digital archiving was commendable since majority agreed.

On the other hand the researcher sought to find out the level of acceptance of institutional repository by the users at Embu University and the following findings were presented; faculty heads at 2(10.53%) were neutral on their support of institution repository through archiving their research output with the repository, 1(5.26%) disagreed, another 1(5.26%) agreed. Student finding are as follows; 4(21.05%) strongly agreed, 1(5.26%) agreed, 3(15.79%) were neutral, 4(21.05%) disagreed, and 2(10.53%) strongly disagreed as captured in figure 4.32.

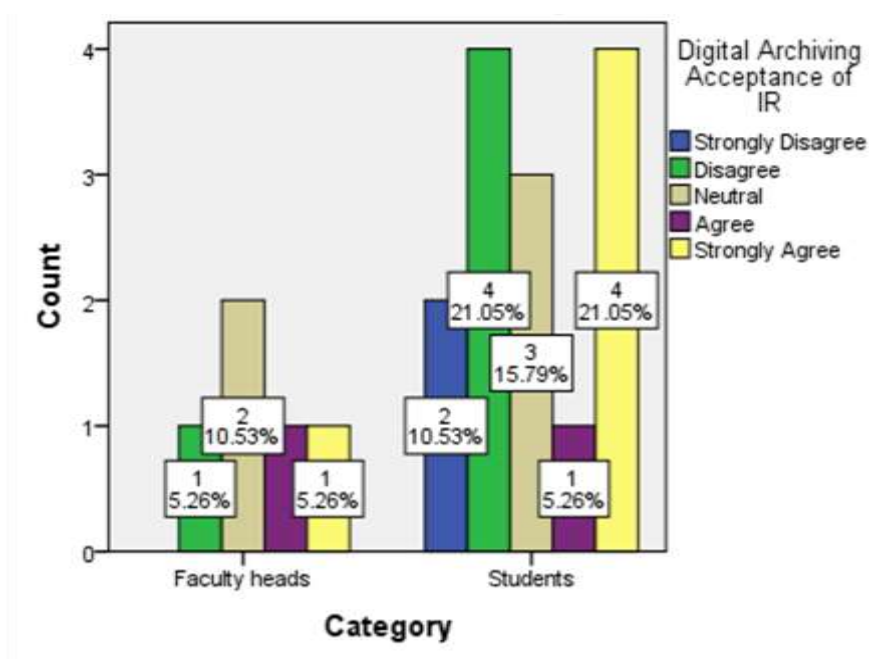


Figure 4.32 Users Acceptance of IR Digital archiving at Embu University

Source: Researcher (2018)

The researcher established that the Perception of the respondents at Embu University on archiving their research output with the institutional repository was not very positive. 2(10.53%) of the faculty heads were either agreeing or strongly agreeing as compared to ones who were uncertain at 1(5.26). majority of the student were not conversant with digital archiving since the acceptance level was at 5(26.31%) as compare to the total number of sampled student at 14(73.68%).

The researcher sought to know the acceptance of institutional repository by the users at Machakos University. Higher percent 4(13.79%), as shown in figure 4.33 of faculty heads disagreed to accepting digital archiving of research content with institutional repository, followed by 3(10.34 %) agreeing, another 1(3.45%) being neutral and 1(3.45%) strongly agreeing. A great percent of students 7(24.14%) disagreed to digital archiving of scholarly content with institutional repository, 6(20.69%) were neutral, 4(13.79%) strongly agreed, and 3(10.34) agreed.

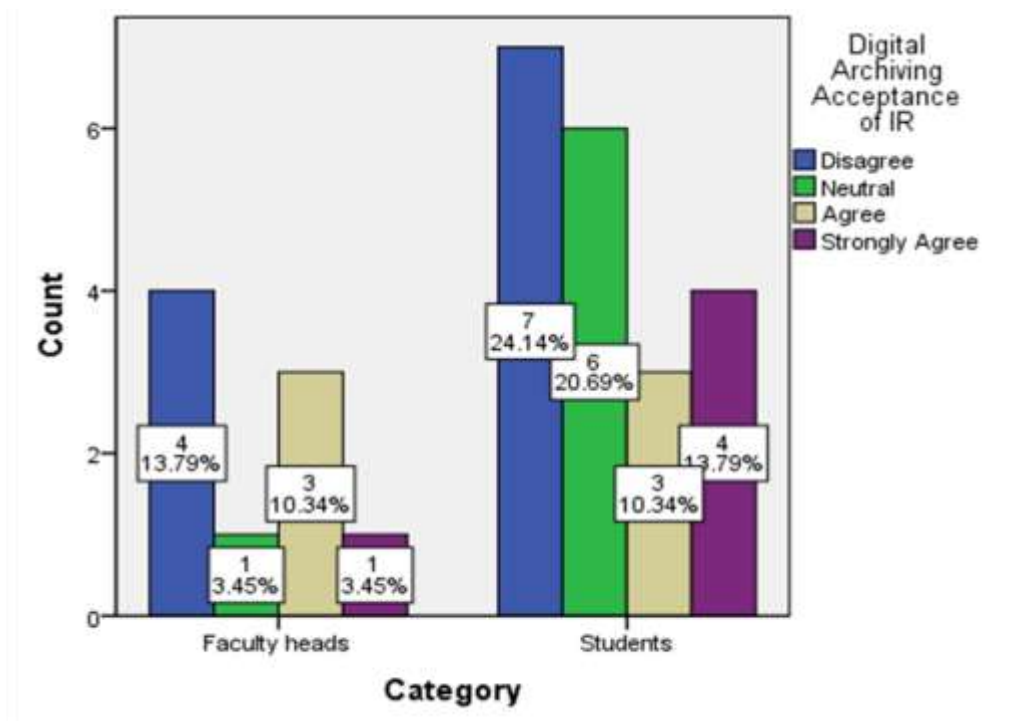


Figure 4.33 Users Acceptance of IR Digital Archiving at Machakos University

Source: Researcher (2018)

The user acceptance of institutional repository digital archiving at Machakos University among the faculty head was average since the ones who agreed were at 4(13.79%) and the others with varying opinions were at 4(13.79%). The student opinion was almost similar to the faculty heads since 7(24.13%) agreed and the rest who disagreed were 7(24.14%). This findings concludes that the users acceptance of institutional digital archiving at Machakos University was average but a lot need to be done to improve on this percentages

4.6.3 Users support for IR through deposit

The researcher sought to find out the level of user support through deposit to the institutional repository. An institution repository is as good as its contents and it imperative that scholars deposit their scholarly content with the repository. As a result the respondents at Kirinyaga University were asked about their perception on supporting institution repository through depositing their scholarly content. The researcher obtained the following findings; the percentage of faculty heads agreeing to support the institution repository through deposit was 3(23.08%,) while 4(30.77%) of students strongly agreed, 3(23.08%) agreed, 2(15.58%) strongly disagreed, and 1(7.69%) were neutral as depicted in figure 4.34.

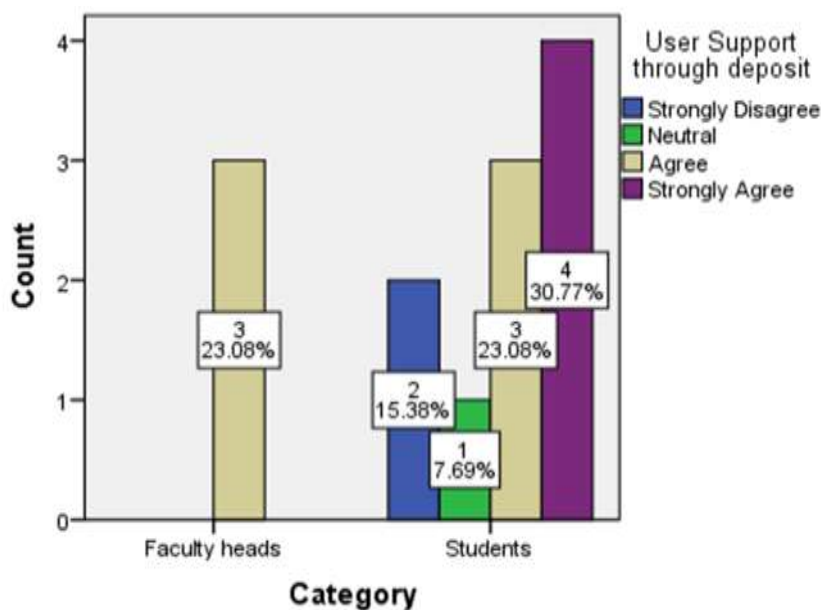


Figure 4.34 Users Support for IR through Deposit at Kirinyaga University

Source: Researcher (2018)

The study established that the majority of the faculty heads at 3(23.08%) support institutional repository through depositing their research output. The majority of students at (53.85%) also were positive about supporting the institutional repository through depositing their scholarly content against 2(15.08%) who disagreed. The user support for institutional repository through deposit at Kinyaga University was concluded to be good.

The researcher sought to find out whether Embu University users support institutional repository through deposits and the following figures were obtained; majority of faculty heads 4(21.05%) agreed. The students at 3(15.79%) strongly agreed, 4(21.05%) agreed, 3(15.79%) were neutral and 4(21.05%) strongly disagreed.

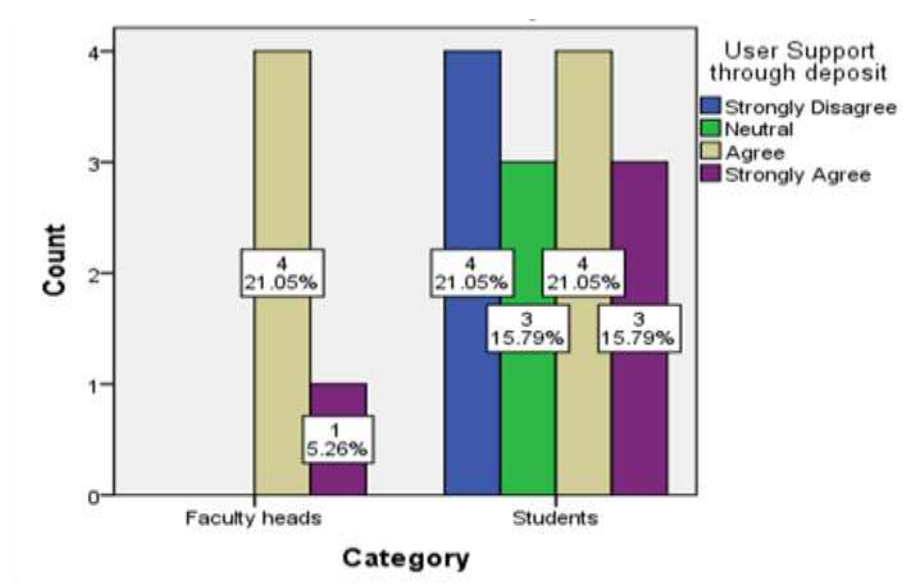


Figure4.35 Users Support for IR through Deposit at Embu University

Source: Researcher (2018)

The Study established that the user support of Embu institutional repository through research output deposit by faculty heads was positive as the majority agreed to depositing their research output with the institutional repository at 5(26.31%). Half of the student sampled at 7(36.84) were positive about support for institutional repository through depositing their

scholarly work as compared to another 7(36.84%) who disagreed and had neutral opinion. The user support for institutional repository at Embu was generally good.

Finally the researcher was keen to establish whether user support for institutional repository through deposits at Machakos University. The study provided the following finding; 1(3.45%) of faculty heads strongly agreed, 3(10.34%) agreed, 3(10.34%) were neutral and 2(6.90%) disagreed. Furthermore, 1(3.45%) students strongly agreed, 7(24.14%) agreed, 5(17.24%) were neutral and 7(24.14%) disagreed as figure 4.36 displays.

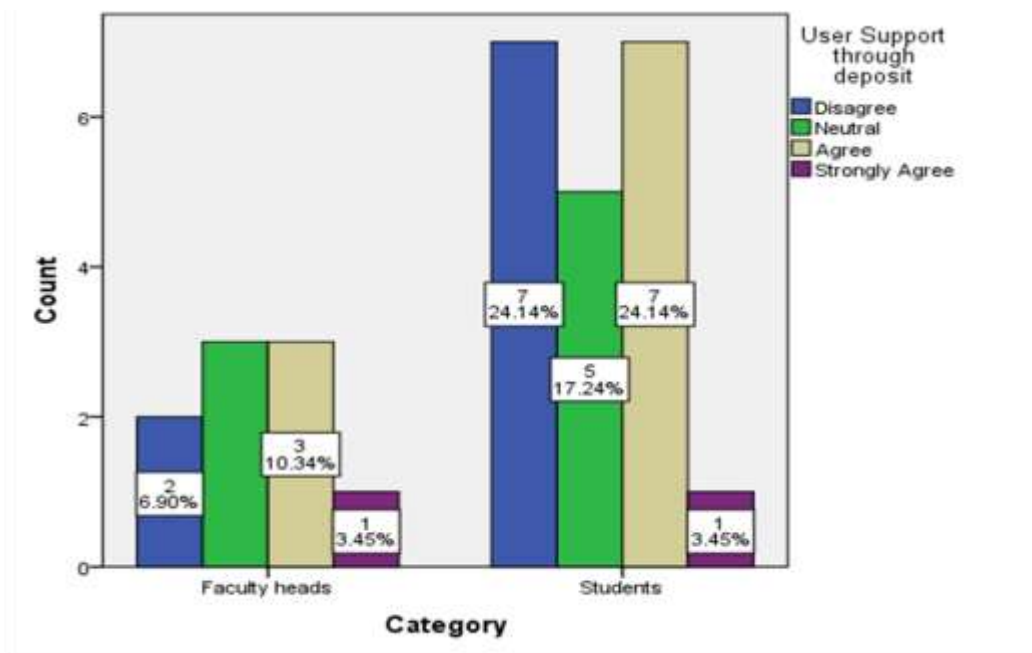


Figure 4.36 User Support for IR through Deposits at Machakos University

Source: Researcher (2018)

The researcher established that the faculty heads lesser number had a positive opinion at 4(13.79%) whereas majority at 5(17.24%) did not support institutional repository through depositing their research output. Students’ perception was positive since half agreed at 8(27.59) as compared to 7 (24.14) who disagreed. In terms of user support for institutional repository through deposit at Machakos University was concluded to be averagely low.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings of the study, conclusions, and recommendations. The study was guided by five objectives, namely, assessing status of institutional repository implementation and content recruitment, awareness levels of user community on scholarly communication process and purposes of IR, user perception towards IR for scholarly communication, and challenges to successful IR implementation in universities in Kenya.

5.1 Challenges to Successful Implementation of Institutional Repositories in Universities in Kenya

The researcher sought to identify challenges to successful implementation of institutional repositories in universities in Kenya. To realise this objective the researcher interviewed institutional repository librarians in Kirinyaga, Embu, and Machakos Universities.

5.1.1 Challenges to successful implementation of institutional repositories

The challenges the institutional repository librarian at Kirinyaga University face from the user community, top management, and insufficient content.

The librarian stated,

“Users supply us with content that does not meet our recruitment criteria and they expect us to upload to the repository. Lack of resources is another challenge.

Requests to buy computers, photocopying machines, printers, and scanners are not honoured by top management because of inadequate finance. There is insufficient content to populate the repository. Most lecturers do not publish frequently as required. In addition, some journals take too long before publishing submitted articles. “

When the librarian asked for possible solutions to the above challenges responded,

“The top management should support us by providing the required resources, and should be involved in persuading the lecturers to deposit their scholarly work with the repository”

5.1.2 Challenges to Successful Implementation of Institutional Repositories at Embu University

Asked about the challenges to Institutional repository the librarian replied,

“First of all copyright issues. Most of articles are published in journals that retain the copyright of the published articles. In such cases only the article’s abstract can be uploaded in the repository. This goes against the institutional repository philosophy of open access. Another challenge is inadequate funds and facilities, and negative attitude by researchers towards self-archiving”

Asked of possible solution the librarian suggested,

“Authors need to be trained and understand their rights, for example on checking their copyright permissions and negotiating with publishers. Management should be made aware of the importance of institutional repository. This will motivate in planning and investing in quality repository services. Researchers should be familiarised on the concept of archiving in institutional repositories as it increases their visibility, enhance preservation of their research work and promote wider access”

5.1.3 Challenges to Successful Implementation of Institutional Repositories at Machakos University

Asked about the challenges to Institutional repository the librarian replied,

“We have to get authors permission to archive their publications with the repository. There is less management support in terms of facilities, infrastructure, and staff are not enough. Lack of relevant content especially research publications, and the repository ends up hosting content of low research value”

Asked of possible solution the librarian suggested

“The librarian should have a policy that caters for the copyright issues. Management should be supportive of the repository through marketing advocacy so as to increase institutional repository deposit”

5.2 Summary of the Findings

5.2.1 Status of Implementing Institutional Repositories and Content Recruitment.

Kirinyaga University IR houses conference/workshop/ seminar proceedings, journal articles, book chapters, lecture notes, speeches, reports, newsletters, research papers, theses, and projects. Embu University IR holds similar content in addition to photographs, graduation booklets, staff profiles. Machakos University IR holds similar content besides university past examination papers.

Content recruitment criteria used to recruit content for Machakos University IR was relevancy and currency, at Embu University the criteria used was purpose of IR, user services, and IR scope, while at Machakos University IR content was recruited on basis of the relevancy of the resources, and users information needs.

Standardisation of IR metadata in the three universities, Kirinyanga, Embu, and Machakos was established and maintained by the IR software provider.

The three sampled universities, Kirinyaga, Embu, and Machakos, had a functional IR that were populated by stipulated criteria, and organised based on IR software metadata and communication protocol.

5.2.2 Role of Staff Charged with Scholarly Communication Process and Implementation of Institutional Repository in Universities in Kenya

The study established that the Staff at the three universities were responsible for IR content recruitment, uploading, description, awareness, and training community of users on use of IR, open access, and copyright issues.

5.2.3 Awareness Levels of User Community on Library Scholarly Communication Services and Purpose of Institutional repositories in the Selected Universities

The study shows that community of users in these universities were aware of the advisory scholarly communication service provided by the libraries. However, the level of awareness on library digital content hosting and preservation service at the three universities was fair. More so, the community of users in the three universities were not well versed with digital scholarship services provided by the IR.

The community of users across the three universities were moderately aware of the IR purposes of storage and archiving of intellectual output. The findings further infer that user community in the three universities were relatively aware of the IR purposes of providing access to digital content. Majority of the user community at the three sampled universities were slightly aware IR role of content dissemination.

5.2.4 User Perception towards the Institutional Repository for Scholarly Communication in Universities in Kenya

Majority of students and faculty heads sampled at Kirinyaga, Embu, and Machakos universities had accepted and adopted the use of institutional repository. However, the results

from the three institutions show that most of the users sampled had not fully accepted archiving with the institutional repositories. Nevertheless, majority of users in the three universities supported the IR in their respective university by depositing their scholarly content.

5.2.5 Challenges to Successful Implementation of Institutional Repositories in Universities in Kenya

Institution repository Implementation challenges encountered by the librarian at Kirinyanga University include failure of user community adhering to content recruitment criteria when providing content for upload. The library also lacks necessary resources, and sufficient content to add to the IR.

Major challenges experienced at Embu University in implementing institutional repository emanates from copyright issues of published journals that retain authors copyright hence affecting the IR open access concept. Librarian at Machakos University had to seek authors' permission to archive their research output with the IR. The management did not fully support the IR implementation by providing required facilities, infrastructure, and staff. The IR also lacked enough and relevant content.

5.3 Conclusions

The three universities Kirinyaga, Embu, and Machakos had fairly functional IRs. The institutional repositories were populated with content that included conference and related proceedings, research articles, theses, dissertations, lecture notes, speeches, graduate booklets, reports, newsletters, photographs, photographs, and past examination papers. The universities had prescribed criteria that helped in IR content recruitment. The IR software deployed stipulated the metadata standardisation and communication protocol.

The librarian in charge of the IR in the three universities were responsible for content recruitment, content uploading, description, creating awareness, providing training on IR use, open access, and copyright.

The user community in the three universities were well aware of the advisory scholarly communication service provided by the librarians; however, they were not adequately aware of the digital content hosting and preservation service, and digital scholarship service.

The levels of awareness of the purposes of IR of storage and archiving of intellectual output, provision of access to digital content, and dissemination of digital content was average across the three universities.

Although the community of users in Kirinyaga, Embu, and Machakos universities had a positive perception towards institutional repositories by accepting and adopting the use of IR and depositing their scholarly work, they had reservations with IR archiving.

The librarians interviewed from the three universities cited lack of top management support in terms of providing necessary facilities, insufficient, and irrelevant content, and copyright, as major challenges in IR implementation.

5.4 Recommendations

The study proposes the following recommendations:

- (i) The librarian urges for top management support in providing resources and encouraging the researchers to support the IR by depositing their research content for archiving.
- (ii) The librarian proposes that authors should be trained on their rights, and made aware of the role and importance of IR in scholarly communication. The top management must also support the implementation of IR.

- (iii) To address the challenges the librarian rooted for establishing of IR policy, management support, and IR awareness among the user community.
- (iv) There should be more intensive campaign of IR awareness among the user community in regard to digital content hosting, preservation, and digital scholarship
- (v) The Librarians need to instil confidence in user community concerning their deposited and archived research output in the IR by putting in place enough measures to ensure copyright issues are well implemented and safeguard the resources from plagiarism and piracy. The librarians should take IR advocacy a notch higher and encourage the institutions to adopt the use of free journal publishing platforms like Open Journal Systems to publish in house journals to fast tract publishing of research articles.

5.4.1 Recommendations for Further Research

The study would like to make recommendations for further research on the following areas:

- (i) The study assessed the status of implementation of IR for scholarly communication in universities in Kenya; however, the study did not delve into the types of IR software installed by the universities. There is a need therefore for a study on IR software's adopted and used in Kenyan universities.
- (ii) Further research should be also being conducted on institutional repositories and intellectual property through information sharing in Kenyan universities.

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APPENDICES

Appendix: I

Letter of Introduction

Pauline Ruguru Njagi,

P.O BOX 75-10200

Muranga.

Email: Rugurupauline@gmail.com

0725230029

Dear, Respondents,

RE: A Questionnaire on assessment of implementation status of institutional repositories for scholarly communication in Universities in Kenya.

I am a post graduate student in the school of education, department of library and information science. As a requirement for the master's degree, I am carrying out a study on assessment of implementation status of institutional repositories for scholarly communication in Kenya.

I therefore kindly request you to give information regarding implementation status of institutional repositories at your institution.

The information you provide shall not be used for any other way apart from research and academic purpose.

Yours faithfully,

Pauline Njagi.

Appendix 11:

Questionnaire for staff and student

Instructions

Kindly respond by putting a tick (✓) your preferred choice the question with options. For the question, that requires suggestion or comment, please use the space provided.

PART 1

1. Background Information

Designation		
Faculty Head		
Student		

What is your educational level?

Undergraduate	
---------------	--

Masters	
Doctorate	

PART 2:

Questionnaire for staff and student

Instruction

For questions 4 – 5 please indicate the extent to which you agree with statement provided in scale of 1-5 where;

1. Neutral
2. Disagree
3. Strongly Disagree
4. Agree
5. Strongly Agree

3. User Awareness about institutional Repositories

User awareness about institutional repository services through the library					
1 Awareness on library copyright advisory service					
2 Awareness on library hosting service					
3 Awareness on library preservation of digital content					
4 Awareness on library provision of scholarship support					

User Awareness about institutional Repositories purpose	1	2	3	4	5
1.Awareness on storage and archiving of digital scholarly content					
2.Awareness of access to digital scholarly content					
3. Awareness of dissemination of digital scholarly content.					
4 Awareness of advisory services on copyright issues					
5 Awareness on digital content hosting and preservation services					
6 Awareness on library digital scholarship and support					
7 Awareness on IR storage and archive purpose					
8 Awareness on IR content access and purposes					
9 Awareness on IR content dissemination purposes					

4. User Perception of Institutional Repository

User Perception of Institutional Repository	1	2	3	4	5
1.What are the perception towards adoption of institutional repository					
2. What are the perception on depositing scholarly content with IR					
3. What are the acceptance levels of IR and digital archiving					
4.What are the support level of user for the IR through deposits					

Thank you.

Appendix III:

Interview Schedule

Institutional Repository Implementation and Content Recruitment Criteria

1. What type of resources do institutional repository hold in this institutions?

.....
.....
.....

2. What criteria do institutional repositories employ during content recruitment?

.....

Are there standard to govern metadata and communication protocol of the institutional repositories?

.....

2. Staff Role in Scholarly Communication and Institutional Repository Implementation

1. What role do staff play during scholarly communication process and institutional repository implementation?

.....
.....

.....
.....

3.Challenges towards successful implementation of institutional repository?

.....
.....
.....
.....
.....

What solution do you propose to the stated challenges?

.....
.....
.....

Appendix IV

BUDGET

Number	Item	Number of Items	Unit Price (Ksh)	Total Price
1	Travel expense	8	1000	8000
2	Stationaries	10 Lim	400	4000
3	Typing and printing		10	8000

	Grand Total	20000
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Appendix V: Work plan

Activity	J	F	M	A	M	J	J	A	S	O	N	D
Development of concept paper and presentation												
Proposal development and defense												
Submission of proposal in graduate school and clearance to do study												
Data collection												
Data analysis												
Submission												