

Adoption of Institution Repository in the Dissemination of Scholarly Information to Students, Lecturers and Researchers at the Maasai Mara University Library Services

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Abstract

Universities and colleges are increasingly adopting institutional repositories in order to effectively disseminate academic work. The aim of this study was to assess the effects of adoption of institutional repositories in dissemination of scholarly information at Maasai Mara University. The specific objectives of the study were to: find out factors that influence the adoption of institutional repository at the university, examine the perceptions of users concerning the adoption of institutional repository at the university, assess management supports towards the adoption of institutional repository Determine the challenges and suggest possible solutions to these challenges and the use of institutional repository at the university. The study used both qualitative and quantitative methods. Stratified random sampling was used to collect data from undergraduate students and academic staff. Purposive sampling was used to collect data from the library staff. The study used structured questionnaires and interview schedule to collect data from 96 undergraduate students, 12 academic staff and 12 library staff. The study used content analysis to analyze qualitative data for the study. Statistical Package for Social Sciences was used to analyze quantitative data collected and represent the same into percentages, pie charts and tables for better interpretation. Findings from this study revealed that although institutional repositories are very significant in addressing challenges users face in relation to access and use of repository resources, the library staff lacks the necessary skills to manage the repository effectively; findings also revealed that the management has not put up policies with regards to access and use of the repository resources. The study recommends that the library management needs to organize training for the staff to manage the repository effectively; in addition, the library management should come up with policy guidelines to guide users on access and use of the repository resources.

Key Words: *Institutional Repositories, Electronic Information, Sharing Knowledge.*

Introduction

Information sharing is indispensable and essential action for the literacy of a particular group of people. Economists have agreed that literacy of the nation is not only the indicator of economic development, but also prediction of nationwide progress that cuts across human capital development, social well-being of the people, environmental sustainability, health safety and entrepreneurial success, and since literacy of the nation is dependent on the kind of information shared among

them, developmental success economically, politically, socially, culturally and vice versa is therefore rooted on quality information provision (Uzuegbu, 2012). Author further added that academic and research institutions as centres of intellectual and scholarly research, are involved in creation and dissemination as well as preservation of knowledge, through development of institutional repositories. Knowledge is increasingly important in the third world context and this call for establishment of viable structures and medium. (Crow,

2002) States that, every academic and research institutions has natural responsibility of primary research, to preserve and leverage constituents by means of sharing academic activities. As a result of information dissemination medium, institutional repositories consists of formally organized and managed collections of digital content created by faculty, staff and students of an institution. Developments of information and communication technology systems are rapidly becoming the vital and core components for conducting and transacting business in organizations. At present, business organization including universities are increasingly going for information communication technology based solutions so as to provide and improve delivery of quality services to customers. Institutions of higher learning are adopting and implementing intensive information communication technology-based solutions to manage and handle information processes and services. Knowledge is considered as the strategic resource and therefore it is inevitable that libraries create, store and transfer information and knowledge in a continuous flow and for the advancement of society.

Universities all over the world are adopting and implementing digital libraries.(Mutula, 2011)Emphasizes that, developments in information technology have enhanced openness of the library systems to internet and occasioned evolution of digital libraries across the world, similarly, Libraries have traditionally been part of the global information infrastructure and an ideological and cultural force with far reaching implications in society .(Kavulya, 2007)stresses that over centuries libraries have collected, maintained, organized and provided access to information and knowledge resources that enable individuals, organization and communities to achieve

own goals.

Many of open source software have been developed for capturing, preserving and distributing digital content. DSpace, Fedora and Greenstone are the most commonly used software platforms for this purpose (Chekudoran, 2011) states that, “among the various open source systems, Greenstone and DSpace are the most widely used software for digital library systems available in the open source domain”.(Biswas & Paul, 2010) States that, since DSpace is fairly powerful software it has widely adopted including various institutions of higher learning in Kenya such as Kenyatta University, Kabarak University, Meru University, Strathmore, Moi, and University of Nairobi”.(Cullen & Chawner)Argues that, the concept of the institutional repository has appealed to professional librarians and university administrators. Setting up the repository is a major undertaking for academic institutions of higher learning that requires a commitment of financial and staff resources for both establishment and maintenance.

Maasai Mara University as a public, independent, non-profit university accredited by the Commission for University Education (CUE) in 2013. The University has a total number of over 10,000 students. (MMU, 2017)The University's vision is *to be a World Class University committed to academic excellence for development*, whose mission is *to provide Quality University Education through innovative teaching, research and consultancy services for development*.The mission is achieved through selected high quality undergraduate and graduate academic programs which results in high order thinking, literacy, global understanding and multicultural perspective, preparedness for career, leadership and ethics, community service and development. The University has five schools that offer various undergraduate and graduate degree programs including School of Business & Economics, School of Tourism & Natural Resources, School of Arts & Social Sciences and the School of

Education.

“The University library is an ultramodern facility which provides information resources necessary to support teaching, learning and research, making it the intellectual hub of the University, the library accommodate over **30,000 volumes**, including about **10,000 in e-journals**, as well as **e- books**, readily accessible over the internet and via the **Open Public Access Catalogue (OPAC)**” (Kimile, 2016) as well as other resources and presents a vision for the 21st century through the integration of books and information technology as well as attractive space that encourage personal studies. Researchers produce a lot of scholarly research in universities all over the world including Kenya. However, the knowledge produced is accessible to the academic community and authorized members only. Researchers in other universities and the general public cannot access the knowledge and information generated by the researchers in these universities”. According to (Ezema, 2011) “Access and dissemination of research findings is a major problem in Kenyan Universities like in other developing countries.

Research is therefore a key driving pillar of Universities all over the world and investment in the same will be irrelevant if the results are not disseminated to the public, despite the effort made by the university to produce quality research output by the faculty, these research output are only accessed and used in print, the institution has already implemented an institutional repository that would make research outputs accessible not only locally but also globally. Despite the adoption of institutional repository at the university there is still low access and use of the repository, students and faculty are still using the print copies of research outputs created. This situation thus highlights the need for an effective process of knowledge dissemination from institutions of higher

learning in Kenya. This study therefore sought to investigate the adoption of institutional repository in dissemination of scholarly information in Maasai Mara University.

The study was guided by the following specific objectives to:

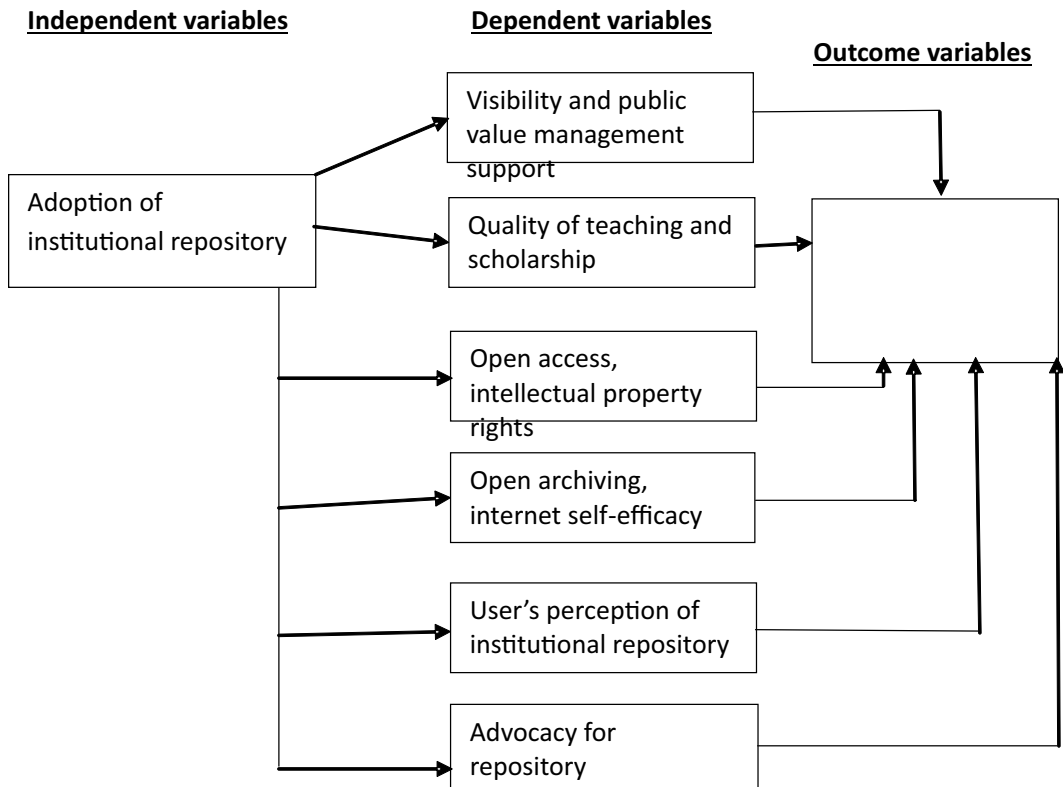
- (i) Find out factors that influence the adoption of institutional repository at the university.
- (ii) Examine the perceptions of users concerning the adoption of institutional repository at the university.
- (iii) Assess the university management support to the adoption of institutional repository at the university.
- (iv) Determine the challenges and suggest possible solutions to the adoption of institutional repository at the university

Conceptual Framework

Bonilla-Calero (2013) defines a repository as a set of services offered in order to manage, disseminate and facilitate access to documents. A number of digital institutional repositories like Kenyatta University Library access the information through open access mode.

The study opted to use conceptual framework to identify and indicate the various aspects that influence adoption of institutional repositories. “Conceptual framework is the argument about why the topic one wishes to study matters, and why the means proposed to study it are appropriate and rigorous”. (Sharon & Lohr, 2010). The dependent variables are visibility and public value, management support, quality of teaching and scholarship, advocacy, open access, open archiving, internet self-efficacy, and users perceptions of institutional repository is influenced by the adoption and use of institutional repository. Additionally, adoption of institutional repository impacts on effective dissemination of scholarly

information and communication. *Figure 2.1: Conceptual Framework for Institutional Repository*



Automation in libraries first began in the 1960s and in 1970s libraries started adopting software applications and machine readable cataloguing. In the 1980s, networking technologies, optical discs, CD-ROMs and communication technologies were introduced. The primary objective of the early technology applications was to automate circulation, acquisition, and the catalogue to bring efficiency and effectiveness in library operations and services. The 1990s witnessed revolutionary changes in the application of information communication technology in libraries such as the internet, World Wide Web protocols, information retrieval standards, integrated library systems and online databases. The 2000s are an era of digital libraries, virtual collection, paperless environment and

round the clock instant remote access to unlimited resources. The rapid advancement in computer and telecommunications, exponential growth of information and media, availability of online databases, reduction in hardware and software costs, passion of using the internet, provision of cost effective communication mechanism and growing user demands are major factors responsible for the increasing use of information technology in libraries around the world.

Libraries of the twenty-first century have reached the point to where they should use educational technologies to maximize access to digital resources and reintroduce the need for teaching and research process in the nebulous information environment (Eke, 2009). Author further states that, "E-learning

has been made possible by the creation of digital library, virtual library or electronic library, in addition, e-learning has been recognized as learning via the internet an advanced form of distance education, and e-library or digital library is considered as organized collection of knowledge stored in digital or electronic interface technologies". According to Armbruster and Rosemary (2010), digital repositories can be classified into four types namely: Institutional, subject-based, Research, and National. The National repository system is increasingly common as such this is recommended to be adopted by MMU for her users. In Africa, the most notable regional repository initiative is the Database of African Theses and Dissertations (DATAD) which is a project of association of African Universities now putting Africa's research output onto the mainstream of the work knowledge whereby DATAD website indicates that about 55 Countries contribute to the repository. For example in Kenya, only the University of Nairobi contributes some theses and disseminations abstracts to the repository.

The advent of internet and other digital reproduction and communication technology indicates that people are now able to access information far more easily than ever before .Globally the developments of information and communication technology (ICT) systems are rapidly becoming the vital and core component for conducting and transacting business in organizations. Presently, business organizations including universities are increasingly going for information communication technology-based solutions so as to provide and improve on the delivery of quality services to customers(Makori E. , 2015).Maasai Mara University has not been left behind since it has adopted usage of certain systems in order to serve its clientele well and reduce the number of employees it has

hence saving finances. Internet services in Kenya have developed over the years since 1996 leading to the introduction of the fiber optic cable in 2009. Internet connectivity has also improved tremendously through initiatives supported by the Kenya Education Network (KENET) and mobile service providers (Safaricom and Airtel), (Makori E. O., 2009). The internet has removed many of the restrictions traditionally associated with access to knowledge, including geographical barriers, time restriction and delays in dissemination, and availability barriers that limited the range of sources that could be accessed by a single person . Improved access has the benefit of enabling researchers to study context more broadly, reducing the amount of duplicative research, and helping researchers to produce better informed and therefore quality research.

Methodology

The study was carried out at Maasai Mara University (MMU) in Narok being a public University currently with a population of more than 1200 students. The study used both quantitative and qualitative methods. A stratified random sampling technique was used to collect data from both undergraduate students, academic staff and Library services providers. Purposive sampling was also employed. A structured questionnaire and interview schedule was used to collect data from 96 undergraduate students, 20 academic staff and 12 library staff. Statistical package for social sciences (SPSS) was used to analyze. Stratified sampling which divided respondents with three mutually exclusive homogenous is summarized in the table below:

Respondents	Sample Population	Sample Size	Percentage (%)
Undergraduate	4675	96	2.05
Academic Staff	145	20	13.79
Library Staff	26	12	46.15
TOTAL	4846	128	

Findings and Discussions

This study sought to establish background information of the respondents based on professional expertise, highest educational level, work experience, and specific responsibilities. In terms of professional expertise, the results are as indicated in figure 4.1. In this study, 8% of the respondents were librarians, 5% were lectures while 87% were students.

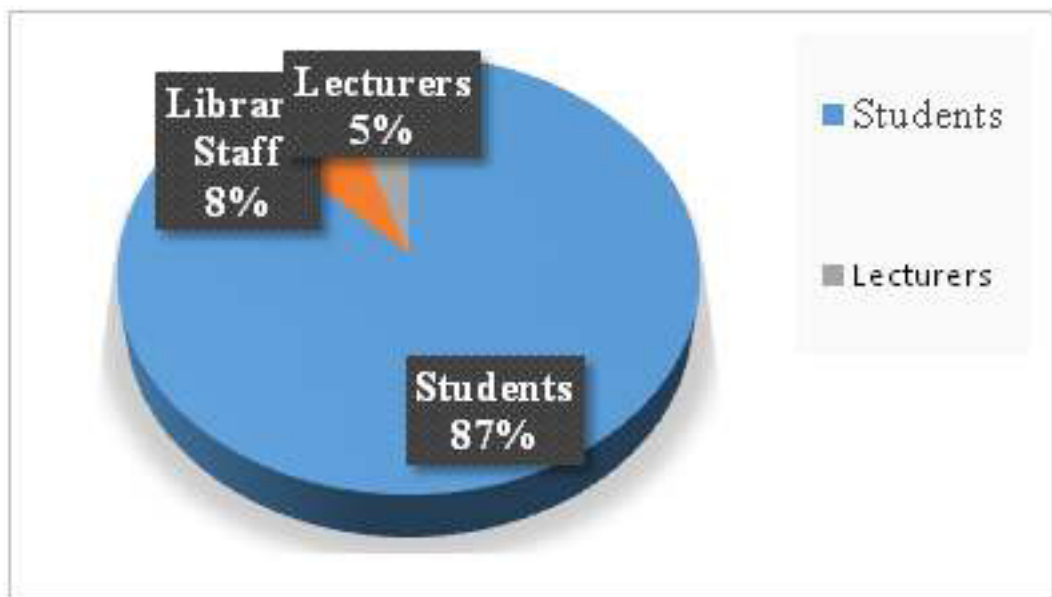


Figure 4.1: Respondents Professional Expertise

Educational Level

In terms of educational level, the results are as indicated in figure 4.2 below. In participation, 18% of the respondents were Diploma holders and 82% were bachelors. This indicates that majority of the respondents were Bachelors holders. Study therefore tends to refer to the Bachelors in order to make reference to the institutional repository.

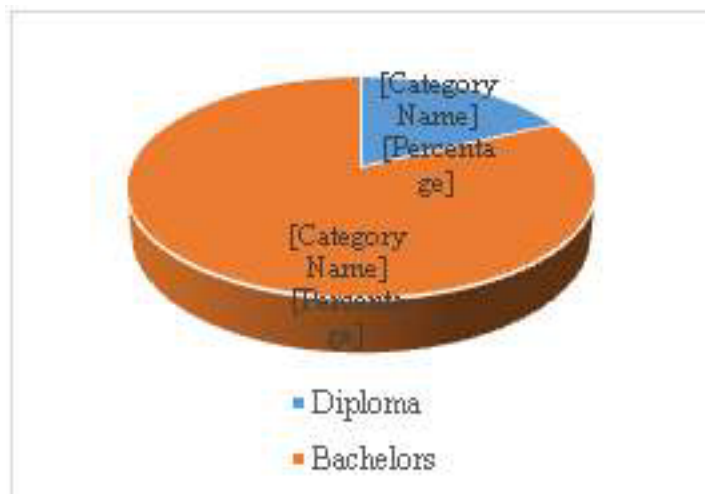


Figure 4.2: Respondents Educational Level

Work Experience

In the aspect of work experience. The study established the following information as indicated in figure 4.3 below. Majority (66%) of the respondents had 6 years and above This shows that they understand much more of the institutional repository hence deduced to provide information that could easily show clearly the picture of adopting IR in the University, followed by 22% 3-5 years, while the

rest 12% had 0-2 years of experience.

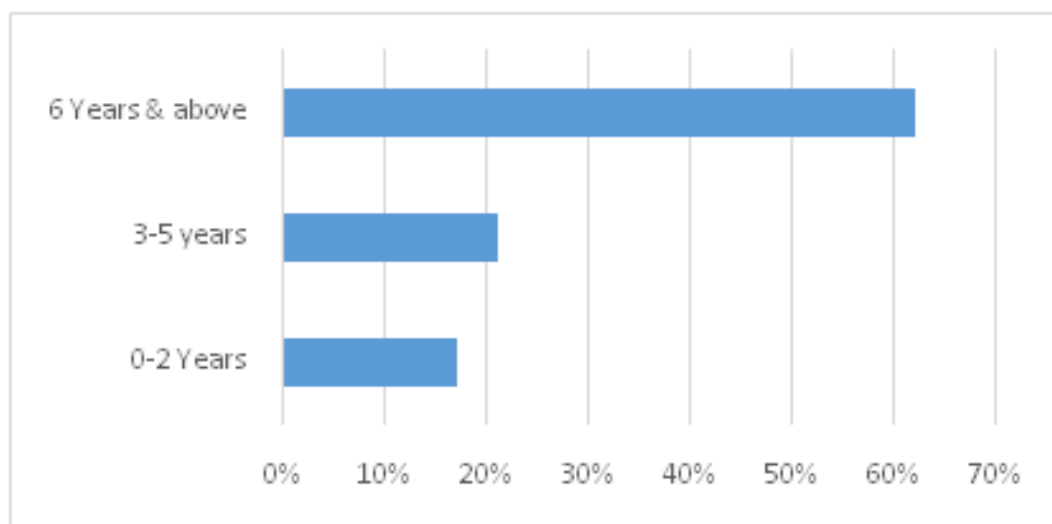


Figure 4.3: Work Experience

Specific Responsibilities

In terms of specific responsibility, the results are as indicated figure 4.4 below. From the findings, Librarians were at 60%, this is a clear indicator of them who deal in most cases with the IR, and 40% were Lecturers who are seen as submitting documents to be uploaded to the IR.



Figure 4.4: Specific Responsibilities

Influence of Institutional Repository
The study sought to find out whether institutional repositories enable visibility and public value, promotes quality of teaching and scholarship at the university, provides open access, addresses changing information needs of communities as well as promotes open archiving. Findings shows that majority of the respondents strongly agreed (83%) followed by those who agreed 16%, while 1% of the respondents were undecided as indicated in table similar on whether institutional repositories promote quality of teaching and scholarship, 82% strongly agreed, followed by 15.5% who agreed, 2.3% were undecided and 0.2% disagreed Regarding whether institutional repository provides open access to scholarly resources, majority of the respondents strongly agreed

69%, followed by those who agreed 16%, undecided once were 14%, while 1% disagreed. In terms of whether institutional repository addresses the challenging information needs of communities, majority of the respondents strongly agreed 77%, followed by those who agreed 13.5%, those undecided were 6.1% and 3.4% disagreed. Further still, the study sought to find out whether institutional repository promotes open archiving. Majority of the respondents strongly agree 67.6%, followed by those who agree 21.3%, while 10.2% disagreed, and the rest 0.9% undecided. This indicates that institutional repository enables visibility and public value, promotes quality teaching and scholarship, addresses the changing needs of communities as well as promotes open archiving.

Table 4.1: Factors that influence adoption of institutional repository

factors that influence adop tion of institutional repositories	5	4	3	2	1
Enables visibility of the institutional and public value	83%	16%	1%		
promotes quality of teaching and scholarship	82%	15.5%	2.3%	0.2%	
provides open access to scholarly resources	69%	16%	14%	1%	
addresses the changing information needs of communities	77%	13.5%	6.1%	3.4%	
promotes open archiving	67.6%	21.3%	10.2%	0.9%	

KEY: strongly agree = 5, Agree= 4, Neutral =3, disagree= 2, strongly disagree= 1

Perception of User towards Institutional Repository

In terms of whether institutional repository will be effective in managing the research output, institutional repository is adoptable, relevant and beneficial to the institution, will address the challenges users face in terms of access and use of research output. Findings as shown in figure 4.5, majority of the respondents (78% strongly agree that institutional repository will be effective in managing the research output, 12% agreed, 3% disagreed, 7.0% were undecided. Regarding whether institutional repository is adoptable, relevant and beneficial to the institution, findings indicated that 60% of the respondents strongly agreed, 21% agreed, while 12% of the respondents were undecided and 7% disagreed. In terms of whether institutional repository will address challenges users face in terms of access and use of research output, findings indicate that 75.1% of the respondents strongly agreed, 12% of the respondents agreed, 7.9% were undecided while 5% disagreed. This indicates that institutional repository will be effective in managing the research output, institutional repository is adoptable, relevant and beneficial, and will address the challenges users face regarding access and use of research output.

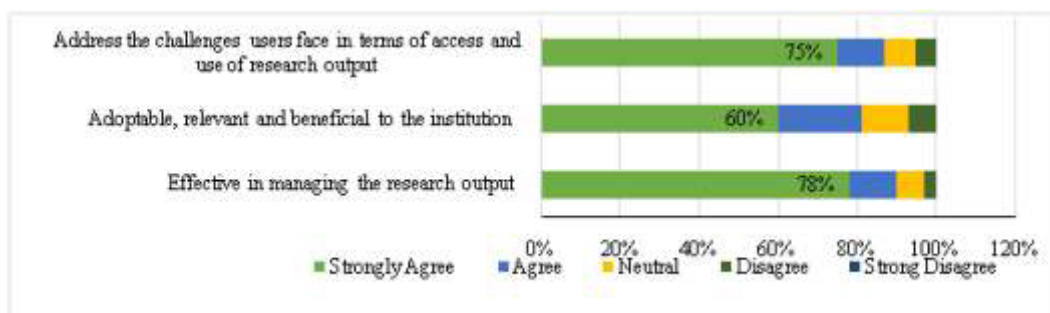


Figure 4.5: IR is Effective, Adoptable and Addressing challenges in access and use of the Institutional Repository

Management Support of the Institutional Repository

The study sought to find out whether the library management has supported the adoption of institutional repository in terms of enough computers, computer software, trained personnel for digitization and submission, availed scanners for digitization, provides sustainable budget for the repository, provides strategies to promote the service as well as deals with copyright issues, from the findings as indicated in table 4.2, majority disagreed (36.1%) that the library management provides enough computer for the repository, followed by the undecided 33.6%, agree 15.1% and strongly agreed 14.6% while 0.6% strongly disagreed. In terms of whether the library management has provided the computer software,

findings indicate that majority of respondents strongly agree 40.2%, followed by those who agree 29.3%, disagree 3.4%, while undecided 17.9% and 9.2% strongly disagreed. In terms of whether the library management has trained personnel for submission and digitization, findings as indicated in table below, majority of the respondents were undecided 50%, followed by those who agreed 33.9%, strongly agree 13.8%, disagree 1.7%, and strongly disagree 0.6%. The study sought to find out whether the library management has provided enough scanners for digitization of content. From the findings as indicated in table 4.2, majority of the respondents were undecided 63.1%, those who strongly disagree were 12.2%, agree 11.1%, disagree 9%, and strongly agree 4.6%.

Regarding whether library management has provided sustainable budget for the institutional repository, findings as indicated in table below shows that, the majority of the respondents were undecided 49.4%, followed by those who agreed 32.2%, strongly agree 12.1%, disagree 5.7%, and strongly disagree 5.6%. In terms of whether the library management has put up strategies to promote the service, the majority of the respondents were undecided 43.7%,

followed by those who disagreed 34.6%, strongly disagree 15.5%, agree 5.6% and strongly agree 0.6%. This indicate that the library management has not provided enough computers although the software is available, management has neither trained personnel for submission and digitization nor provided scanners for digitization, in addition, there is lack of sustainable budget for the repository, as well as strategies to promote the service.

Table 4.2: Management Support of the Institutional Repository

Management support of the Institutional repository	5	4	3	2	1
Provides enough computers	14.6%	15.1%	33.6%	36.1%	0.6%
provides the computer software	40.2%	29.3%	17.9%	3.4%	9.2%
trains personnel for submission and digitization	8.8%	23.9%	60%	1.7%	5.6%
Provides scanners for Digitization	4.6%	11.1%	63.1%	9%	12.2%
provides sustainable budget for the repository	12.1%	32.2%	49.4%	5.7%	0.6%
Put up strategies to promote the service	0.6%	5.6%	43.7%	34.6%	15.5%

KEY: strongly agree = 5, Agree= 4, Neutral =3, disagree= 2, strongly disagree= 1

The study conducted interview with one top library management staff on the management support. The interviewee reported that;

“Library management has availed computers for accessing the content of the repository but they are not enough, currently there is only 1 computer for OPAC therefore more computers should be purchased and since there is wireless internet connection users should be encouraged to carry their laptop pcs for accessing the repository”

“Currently there are no scanners for digitizing content, the research output are uploaded into the repository via a soft copy (CD-ROM)”

“Most library staff lacks the necessary information technology

skills to manage the diversity of material types that are included in the repository. The ever changing information and communication technology calls for regular training of staff through workshops and seminars in order to enhance their technical know how to manage the repository. Furthermore, the interviewee confirms that there is need for the repository be made a fully functional unit independent from other sections of the library and should be fully funded”.

“There are clear policy guidelines with regards to access and use of the information resources, currently it is mandatory for graduate student to submit their research project on a CD-ROM, but these policies should be reinforced to clearly state whether these research project will be accessed up to abstract or full text level”.

Awareness of the Availability of Institutional Repository

The study sought to establish how the respondents learnt about the availability of institutional repository at the university, as explained in table below, the findings shows that majority (58.2%) learnt about the availability of institutional repository through Library Website, 40.3% learnt through library tour and orientation, 0.8% Notice update through E-mail, while another 0.6% learnt through brochure as indicated in figure 4.6. The findings therefore show that the library management has not fully exploited other means of marketing and promoting institutional repository to the community.

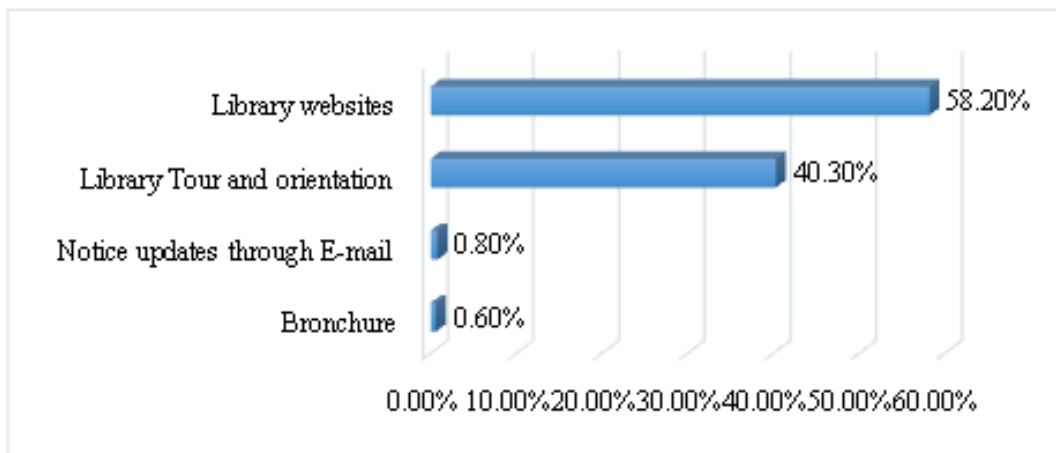


Figure 4.6: How Users Learnt About the Repository

Challenges to the adoption of the institutional repository

In terms of whether copyright issues, difficulty in content recruitment, and lack of training affects adoption of institutional repository, findings are as indicated in table 4.3, majority of the respondents (79.5%) strongly agree that copyright issues are a hindrance to adoption of institutional repository, 11.7% agree, 5.7% were undecided, while 3.1% disagree. Regarding whether difficulty in content recruitment affects adoption of institutional repository, majority of the respondents 63.2% strongly agreed followed by 15% agreed, 14.3% were undecided, while 7.5% disagreed. The study further sought to establish whether lack of enough training affects adoption of institutional repository. From the table below, majority of the respondents strongly agree 89.7%, those who agree were 6.9%, 2.3% were undecided, while 1.1% disagreed. This indicates that copyright issues, difficulty in content recruitment, as well as lack of training affect adoption of institutional repository. This implies that the library management has no laid down strategies to deal with the above issues hence the need for policies to deal with copyright, and content recruitment as well as training of staff in relation to use of the repository.

Table 4.3 : Challenges that Hinder Adoption of Institutional Repository

Challenges that Hinder Adoption of Institutional Repository	5	4	3	2	1
Copyright issue is a hindrance to adoption of Institutional repository	79.5%	11.7%	5.7%	3.1%	
Difficulty in content recruitment affects adoption of institutional repository	63.2%	15%	14.3%	5.7%	1.8%
Lack of training affects adoption of institutional Repository	89.7%	6.9%	2.3%	1.1%	

KEY: strongly agree = 5, Agree= 4, Neutral =3, disagree= 2, strongly disagree= 1

One library management staff while interviewed reported that;

“Although there is mandatory submission of soft copy of the research project by undergraduate and postgraduate students, there are no well-established structures for content recruitment from the academic and library staff. There is need for comprehensive policy that will guide collection of content from the academic and library including retrospective scanning of document necessary for the repository”. “There is need for staff training on submission and digitization of information resources”.

On the issue of computers, she outlined that:

“There was not enough computers but the management has provided a certain number of computers under the digital Library which would be in operation to facilitate access and utilization of the institutional repository”.

Conclusion and Recommendations

Based on the findings and discussions presented in the previous sections, this study makes the following conclusion:

Institutional repository is an important concept in the digital era. No institution can survive minus the facility, findings shows that institutional repositories are vital since they enable institutional visibility and increase the value of institutions of higher learning. The revolution in academic communication brought by institution repository is vital in keeping scholarship vital and effective. It is clear that institutional repository is very powerful idea that can serve as an engine of change for institutions of higher learning.

From the findings, it can be concluded that the library management has done little in terms of formulating policy guidelines that help direct users on how to appropriately access and use the repository resources. The policies and guidelines on access and

use of repository resources play a fundamental role in providing users with rules governing rights and limitations for access and use of the repository materials.

User training is very important if institutional repositories are to be accessed, used, and managed effectively. It is important that one must have necessary skills. Readers should improve the information and computer literacy skills. Similarly, it is equally important for researchers to become internet literate in order to use the electronic media more effectively for accessing and disseminating scholarly content.

Management commitment and support are vital for successful institutional repository implementation to ensure preservation and maintenance, information technology infrastructure, digital rights management and institutional mandate, setting up the repository is the major undertaking for the institution that requires commitment of financial and staff resources to ensure

success in establishment and maintenance of the repository.

- (i) University should endeavor to adopt open access institutional repository to enable them solve the access and use barriers such as copyright issues. Open access refers to works that are created with no expectations of direct monetary benefits and availed to users at no cost on the web for purposes of research and education. Any user can read, download, copy, distribute, print, search, or link to the full text without financial, legal or technical barrier.
- (ii) IR server should be standing alone to avoid circumstances of it being off giving researchers hard time to access information materials within it.
- (iii) Institutional repository is a capital intensive course of action that needs enough allocation of funds for successful adoption and implementation; the institutional repository therefore should be made a separate fully functional unit within the library department, this will ensure that enough funds are availed to manage the repository services effectively.
- (iv) The library management should embark on aggressive promotion and marketing of the repository service, the library should take advantage of social media platforms such as Facebook, twitter, WhatsApp to create awareness of the existence and value of the repository to the community.
- (v) Academic staff should be encouraged to grade citation of repository resources in reference on students' assignment; similarly, students can be encouraged to use repository resources more often through notices and by just pushing the link to them. The library management has to invest time, staff and resources in marketing the repository to users.
- (vi) The Library management should provide enough Ethernet ports within the Library environs so that students having laptops are able to visit the IR and access information materials online.
- (vii) More computers should be provided in the Library to support students who don't have laptops to be able to access the IR with a maximum easy.
- (viii) Policies of the IR should be embraced by both parties; Library staff, students and members of the faculty
- (ix) Library management need to tighten its belt to ensure that what is submitted to be uploaded to the IR should adhere to the policies.

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