POSITIONING LIBRARY AND INFORMATION SERVICES TO ACHIEVE SUSTAINABLE DEVELOPMENT: INNOVATIONS AND PARTNERSHIPS

Proceedings of the 23rd Standing Conference of Eastern, Central and Southern African Library and Information Associations

23rd – 27th April 2018
Imperial Resort Beach Hotel
Entebbe, Uganda

Edited by
Gertrude Kayaga Mulindwa, Eric Nelson Haumba and Robert Stalone Buwule

Uganda Library and Information Association
The National Library of Uganda
2018

ISBN: 978-9970-569-02-1

Published by:

Uganda Library and Information Association
P. O. Box 25412, Kampala, Uganda
Secretariat@ulia.org.ug
Website: www.ulia.org.ug

and

National Library of Uganda
P. O. Box 4262 Kampala Uganda
Tel. +256414233633
Website: www.nlu.go.ug

This work can be referenced as:

Uganda Library and Information Association (2018). *Positioning Library and Information Services to Achieve Sustainable Development- Innovations and Partnerships: Proceedings of the XXIII Standing Conference of Eastern, Central and Southern African Library and Information Associations and Institutions.* Held from 23rd to 27th April 2018 at Imperial Resort Beach Hotel, Entebbe, Uganda.

Designed by: Bigirwenkya Robert

Paper Review Committee

Dr. Alison Kinengyere

Prof. Dennis Ocholla

Ms. Gertrude Kayaga Mulindwa

Mrs. Irene Muthoni Kibandi

Prof. Isaac M. N. Kigongo – Bukenya

Mrs. Jacinta Were

Prof. Julita Nawe

Dr. Justin Chisenga

Prof. Kendra Albright

Ms. Mary Nakangu

Dr. Sarah Kaddu

Mrs. Sarah Kagoda – Batuwa

Conference Sponsors

CPA, Uganda

EBSCO

Emerald Publishing

Universal Knowledge Softwares

Centenary Bank, Uganda

Foreword

The Uganda Library Association and the National Library of Uganda are proud to host the twenty third Standing Conference of Eastern, Central and Southern African Librarians in the lakeside town of Entebbe. The founding fathers of SCECSAL more than forty years ago must be proud to see how their creation has grown from the original three library associations of Kenya, Tanzania and Uganda to embrace library associations from 26 African countries. SCECSAL regularly brings together the largest gathering of librarians from different countries of Africa and beyond. The sharing of experiences and ideas always has an everlasting impact on the services that librarians render to their communities.

The theme of this SCECSAL is ***Positioning Library and Information Services to Achieve Sustainable Development: Innovations and Partnerships***. It builds on the theme of the 22nd SCECSAL, which addressed the theme 'Digital transformation and the changing role of libraries and information centres in the sustainable development of Africa.' It is a reflection of the important responsibility that librarians are increasingly taking on in the development of their societies. It is also a realisation that as safe, neutral places in their communities, be they school, public, research or academic environments, libraries must be at the heart of their communities and must take the lead in ensuring sustainable development. The theme is also a call to all librarians in the region to embrace the constantly changing world trends and priorities by actively being innovative and working, not in isolation, but in partnership with others.

Eleven sub-themes were identified under the main theme and they are:

- Inclusive Library and Information Services for National development
- SDGs and Library and Information Services in the SCECSAL region
- Open science, open data and LIS and the SDGs
- Broadening LIS partnerships to achieve the SDGs
- Library and information services to improve health care
- Knowledge Management and Innovation
- Effective records management to fight corruption
- Agricultural information services and food security
- ICTs and Library and Information Services
- Indigenous Knowledge and the preservation of cultural heritage
- Promoting information ethics for sustainable development

Over fifty papers, on various topics and embracing the various sub-themes appear in this book and the topics covered range from the experience of librarians working with people in rural communities, to how libraries can play a crucial role in ensuring that their communities have access to the immense opportunities offered by the new technologies. Also covered, among others, is the important role that libraries in academic institutions play in shaping the future information seeking behaviour of students.

In addition to the papers, posters depicting the great work librarians are doing in their communities are being presented. There are also seven workshops that have been organised by experts, while three panels of experts will be speaking on their areas of specialisation.

The Uganda Library Association (ULIA) and the National Organising Committee is very grateful to all those who submitted abstracts to present papers, run workshops and present posters at this conference. Gratitude also goes to the team of paper reviewers, the sponsors and all those who have contributed to the organisation of this conference. We believe that SCECSAL will continue growing from strength to strength.

SCECSAL 2018 Organising Committee

Dr Sarah Kaddu (President – Uganda Library and Information Association)

Prof. Constant Okello-Obura (East African School of Library and Information Science and Chair of the National Organising Committee)

Prof. Isaac M. N. Kigongo-Bukenya (Uganda Christian University)

Mr Charles Batambuze (Uganda Reproduction Rights Organisation and the National Book Trust of Uganda)

Ms Faith Akiteng (Makerere University Library)

Ms Sarah Kagoda (formerly of the East African Community)

Ms Gertrude Kayaga Mulindwa (African Library and Information Associations and Institutions)

Mr Robert S. Buwule (Kyambogo University Library)

Mr Eric Nelson Haumba (YMCA Comprehensive Institute)

Mr Innocent Rugambwa (Uganda Parliament Library)

Mr Josepert Chelanget (Institute of Certified Public Accountants of Uganda)

Mr Adonia Katungisa (National Library of Uganda)

Mrs Stella Bossa Nekuusa (National Library of Uganda)

Prof Hellen Byamugisha (Makerere University Library)

Ms Winny Nekesa Okullo (Public Procurement and Disposal of Assets)

Mrs Allen Ssonko-Ssuna (Uganda National Examinations Council)

Table of Contents

AGRICULTURAL INFORMATION SERVICES AND FOOD SECURITY

ICTS AND LIBRARY AND INFORMATION SERVICES

INDIGENOUS KNOWLEDGE AND THE PRESERVATION OF CULTURAL HERITAGE

INCLUSIVE LIBRARY AND INFORMATION SERVICES FOR NATIONAL DEVELOPMENT

CONTEXTUALISING INFORMATION SERVICES FOR PEOPLE WITH DISABILITIES IN MALAWI

Dorothy D. Eneya
PhD student
Department of Information Studies,
Faculty of Arts,
University of Zululand

Dennis N. Ocholla
Senior Professor
Department of Information Studies,
Deputy Dean
Research and Internationalisation
University of Zululand

and
Janneke Mostert
Professor and Research Fellow
Department of information Studies
Faculty of Arts
University of Zululand

Abstract

This paper seeks to establish the extent to which the Malawi Government has contextualised the United Nations Convention on the Rights of People with Disabilities (UNCRPD) with regards to provision of information for people with disabilities, with a special focus on public university libraries. The role of academic libraries in students' academic achievement cannot be overemphasized. The UNCRPD emphasises on legal and human rights for people with disabilities. Malawi Government ratified the UNCRPD in 2009, thereby guaranteeing people with disabilities their fundamental human rights, one of which is access to information. By ratifying the UNCRP, Malawi recognizes that it is a legal requirement to make information accessible to people with disabilities. This requirement applies to all public institutions too. Thus by their nature, public universities in Malawi are required to offer inclusive information services for students with disabilities. However, searching through literature, it is evident that people with disabilities are excluded in most information services. This paper gives an overview of the UNCRPD and what it provides for people with disabilities in terms of access to information. By reviewing literature on disability studies and disability related policies in Malawi, the gap between the UNCRPD framework and the actual practice is established and recommendations on how to narrow the gap are drawn, by referring to international best practices. These recommendations provide a bedrock for

designing information services for people with disabilities in all types of libraries in Malawi that will ensure adherence to the UNCRPD framework. The paper focuses on information provision alone, leaving out other provisions outlined in the UNCRPD whose pursuance may give different results.

Key words: *People with disabilities, United Nations Convention on Rights for People with Disabilities (UNCRPD), academic libraries*

Introduction

Libraries, academic or otherwise, are integral to the communities they serve. Academic libraries contain information that aim to complement the teaching, learning and research activities of the parent institutions. Kenyon (2009) posits that the university library is a very important repository of scholarly information. Academic libraries, owing to their function of complementing the academic activities of the parent institution, must be accessible to all students as they seek to achieve their academic goals. Throughout history libraries have been known for opening up to even the most disadvantaged in society.

The American Library Association (ALA) (2001), the world's oldest and largest library association, stresses the need for libraries to create a non-discriminating environment that promotes equal access to library resources to persons with disabilities. Considering challenges faced by people with disabilities in accessing library services and facilities, the International Federation of Library Associations and Institutions (IFLA) developed a checklist for all types of libraries as a tool for facilitating access to all types of libraries, including academic libraries (Irvall & Nielsen, 2005). The checklist provides guidelines for exterior library facilities, interior facilities that will enable entry into the library for all people with disabilities, library shelving and information formats and media that facilitate information access to different categories of disability. UNESCO (1999) emphasized that failure by academic libraries to provide accessible information to students with disabilities is equivalent to depriving them of higher education - a fundamental right. The contribution of academic libraries to student achievement, including those with disabilities has been underscored by Association of College and Research Libraries (ACRL) (2016:16), Thorpe et al. (2016) and Bell (2008).

Statement of the problem

Malawi is a signatory to the United Nations Convention on the Rights of People with Disabilities (UNCRPD). As per the obligations set out in the convention, Malawi Government is required to implement the convention by ensuring access to all services and facilities by people with disabilities. Being publicly funded institutions, libraries in public universities need to implement the UNCRPD by ensuring that their services and facilities are accessible to students with disabilities. However, little is known of how public universities in Malawi contextualize the CRPD in their information service provision.

Public university libraries in Malawi

There are four public universities in Malawi, namely; University of Malawi (UNIMA), Malawi University of Science and Technology (MUST), Mzuzu University and Lilongwe University of Agriculture and Natural Resources (LUANAR) and Mzuzu University (MZUNI). University of Malawi comprises of four constituent colleges, namely; Chancellor College, College of Medicine, Kamuzu College of Nursing and The Polytechnic. Each of the colleges is serviced by a library headed by a College Librarian. The libraries in the other three universities are headed by a University Librarian.

Bunda campus, the largest campus of Lilongwe University of Agriculture and Natural Resources, used to be a constituent college of UNIMA until 2012 when it was delinked and merged with the Natural Resources College (NRC) to form a separate university. Mzuzu University was formed in 1997 by an act of parliament and occupies what used to be Mzuzu Teachers Training College. MUST is the newest university having been opened in 2014.

University of Malawi College libraries make up the University of Malawi library system. These libraries were coordinated by the University Librarian, a position which was phased out in 2010. Since then the college libraries operate in a decentralized system, which has led to disparities in ICT utilization and funding.

The libraries are funded through the parent institutions, which poses a challenge because in times of budget cuts, as the current situation facing public universities in Malawi (Mambo, Meky, Tanaka, & Salmi, 2016; World Bank, 2010), libraries are usually an easy target, forcing them to solely depend on donations (A. Chaputula & Boadi, 2010) and unable to maintain equipment and renew software licenses (Eneya, 2008, p. 78).

Prevalence of disability in Malawi

The National Statistics Office in Malawi is responsible for population census in Malawi. Before independence census was conducted in 1911, 1921, 1926, 1931 and 1945. The first post-independence census was conducted in 1966. Subsequent censuses followed in 1977, 1987, 1998 and 2008. The 2008 census was the first to include information on people with disabilities (NSO 2010:3). According to the 2008 census, 3.8% of the population is disabled with 2.8% of the disabled population being children (under the age of 18). Disability prevalence was found to be higher in males (2.5%) than females (2.2%) and 4.1% of the disabled population lives in rural areas and 2.5% in urban areas. Table 1 below shows the disability prevalence by type in Malawi:

Table 1. Prevalence of disability by type in Malawi

Disability Type	Percentage
Seeing	26.5
Hearing	16.4
Speaking	6.1
Walking	22.0
Other	29

Source: National Statistical Office Disability Census, 2010.

As shown in Table 1, the highest disability in Malawi is visual impairment at 26.5%; followed by mobility at 22.0% and hearing impairment at 16.4%. Speech impairment has the lowest occurrence at 6.1%. It is imperative therefore, that these disabilities should be taken into account when planning for public services and infrastructure such as library services.

Education for people with disabilities in Malawi

Malawi is implementing inclusive education having signed the Salamanca Statement and Framework for Action on Special Needs Education (UNESCO, 1994). Inclusive education is a system of educating children with disabilities in mainstream classrooms together with their non-disabled peers (Chimwaza, 2015), as opposed to special schools. This system is hailed for its ability to enhance social skills in children with disabilities and increasing awareness to disability issues among teachers and the other students without disabilities (Chilemba, 2013; Chimwaza, 2015). For inclusive education to be successful, regular schools must be transformed in order to accommodate all students, whether disabled or not. This transformation must continue to universities where students with disabilities are also taught in mainstream classrooms. Library services and facilities too must be transformed to ensure access by students with disabilities owing to the critical role played by libraries in the academic success of students (Association of College and Research Libraries (ACRL), 2016; Thorpe et al., 2016). It has been established that all students have the same academic goals regardless of disability According to Chimwaza (2015), inclusive education has its roots from the social model of disability, which blames the unaccommodating society for the exclusion of people with disabilities (Oliver, 1990). The social model enforces equality of all students, whether disabled or not (Hernon & Calvert, 2006). By viewing people with disabilities as victims of an oppressive society (Hanley 2014:19), the social model demands removal of barriers by academic libraries in order to ease access to services and facilities by students with disabilities. Therefore, this paper adopts the social model of disability to illuminate the extent to which academic libraries in Malawi have contextualized the CRPD as regards to services and facilities for students with disabilities. According to Mambo, Meky, Tanaka, and Salmi, (2016), the higher education system in Malawi absorbs only a small fraction all students with disabilities that graduated from secondary school due to lack of infrastructure, teaching and learning materials and equipment appropriate for students with disabilities.

The Government of Malawi has put in place a number of interventions for education of people with disabilities, i.e. The National Policy on Special Needs Education (Malawi Government, 2007), National Education Sector Plan 2008-2017 (Ministry of Education 2008), and National Policy on Equalisation of Opportunities for Persons with Disabilities (Ministry of Social Development and People with Disabilities 2006). All these policies are linked to the national constitution. The 2012 Disability Act prohibits any form of discrimination against people with disabilities in all sectors including education.

Although these policies exist, they emphasize more on the following sub-sectors of education: Early Childhood Development, Primary Education, Secondary Education, Non-formal Education (Research for Inclusive Education in International Cooperation 2014).
In addition, most of the research done in Malawi on the challenges faced by learners with disabilities focuses on those education sub sectors. Munthali, Tsoka, Milner, and Mvula (2013) carried out a situational analysis of children with disabilities in Malawi. The report focuses only on children with disabilities. Research for Inclusive Education in International Cooperation (2014) analysed documents relating to disability issues in Malawi. From the analysis the sub-sectors of education where barriers to learners were identified, higher education is missing. The report mentions pre-school, primary, secondary and non-formal sector only. In addition to this, Lang (2008) undertook a disability audit for Namibia, Swaziland, Malawi and Mozambique. In the report there is no mention of higher education. Norwegian Federation of Organisations of Disabled People (2004), Chavuta, Itimu-Phiri, Chiwaya, Sikero, and Alindiamao (2008) carried out a situational analysis of mainstream education system for inclusion of learners with special needs. This study focused on primary schools in the Shire Highlands Education Division. This shows that disability in higher education in Malawi is underexploited and the magnitude of the challenges students with disabilities face in their pursuit of higher education are not exposed.

The Convention on the Rights of People with Disabilities

People's rights are universally guaranteed by the United Nations Declaration on Human Rights (UNDHR) (United Nations, 1948). However it was noted that disabilities are not explicitly mentioned in this declaration, neither are they mentioned in the International Covenant on Civil and Political Rights (ICCPR) and the Covenant on Economic, Social and Cultural Rights (CESCR), which together with the UNDHR make up the International Bill of Rights (Schulze, 2009). This led to negative perception of disability whereby people with disabilities were viewed as underserving of any rights.

The CRPD was therefore introduced to ensure equal rights of people with disabilities. With special interest to this paper is Article 9 of the convention which states:

> To enable persons with disabilities to live independently and participate fully in all aspects of life, States Parties shall take appropriate measures to ensure to persons with disabilities access, on an equal basis with others, to the physical environment, to transportation, to information and communications, including information and communications technologies and systems, and to other facilities and services open or provided to the public, both in urban and in rural areas. These measures, which shall include the identification and elimination of obstacles and barriers to accessibility, shall apply to, inter alia:
>
> (a) Buildings, roads, transportation and other indoor and outdoor facilities, including schools, housing, medical facilities and workplaces;
>
> (b) Information, communications and electronic services and emergency services. (United Nations, 2006, p. 9).

This article gives prominence to accessibility as a prerequisite to various provisions and ensuring equality as full and equal access to the enjoyment of all human rights. According to Schulze (2009), perceiving human rights in the accessibility lens offers an opportunity to remove all barriers that impede full and effective enjoyment of human rights by people with disabilities. It is disheartening to learning that students with print disabilities only access less than 5% of what is available to their fellow sighted colleagues. The situation is worse in developing countries like Malawi where the fraction is as low as less than 1% (Electronic Information for Libraries (EIFL), 2017). Article 29 0f the CRPD is very critical to libraries as it provides a tool to identify obstacles faced by people with disabilities in accessing information, bearing in mind that information is a human right. Furthermore, Article 21 of the CRPD requires state parties to provide information in appropriate formats for people with disabilities to ensure equal access.

Thus, the CRPD recognizes the inherent dignity of people with disabilities and it serves as a key to unlock numerous social concepts which increase marginalization of people with disabilities and impediment of their rights. Public university libraries have an obligation to grant access to their facilities and services to people with disabilities as stipulated by the above mentioned article.

Another international instrument that promotes the right to access to information for people with disabilities is the Marrakesh Treaty (Lewis, 2013). According to Electronic Information for Libraries (EIFL) (EIFL, 2016), the Treaty is a remarkable progress to information access for blind and visually impaired people. For countries that have ratified the treaty, it gives libraries the right to transcribe printed works into alternate formats such as braille and audio whose copies can also be shared across borders. Ocholla (2006) notes that some sections of society, which includes people with disabilities, are segregated in information provision despite libraries being historically inclusive societies. Ocholla attributes this to lack of skills by library personnel and lack of resources for libraries to provide such services.

The Malawi government acknowledges the challenges encountered by people with disabilities as stated in government policy documents. For instance, the National Education Sector Plan (NESP) (Government of Malawi, 2008), the country’s national framework for education, acknowledges the challenge of low enrolment of students with disabilities in higher education and devises mechanisms of mitigating against this challenge. Vision 2020 (Government of Malawi, 1998), the long term national development framework, has a strategic aim of formulating a comprehensible national policy that would explicitly address issues regarding people with disabilities.

Malawi is also a signatory to the Salamanca Statement and Framework for Action on Special Needs Education, demonstrating its commitment to education of children with disabilities.

In terms of legal framework, the Education Act is a principle education legislation in Malawi. However, Chilemba (2013) noted that the act does not make any reference to education of people with disabilities or inclusive education.

Following the ratification of the UNCRPD in 2009, the Malawi government passed the Disability Act (DA) (Government of Malawi, 2012) in 2012 in order to domesticate the UNCRPD. The Disability Act compels government “to make provision for the equalization of opportunities for persons with disabilities through the promotion and protection of their rights.” The 2012 Disability Act replaced the Handicapped Persons Act (Government of Malawi, 1971). Unlike the Handicapped Persons Act, The Disability Act places much emphasis on social and environmental barriers reflecting the social model of disability (Oliver, 1990) which is an underpinning theory for the UNCRPD. For instance, in Section 8 of the Disability Act, government commits to ensure removal of barriers in the physical environment, transportation, information and communications for accessibility by people with disabilities.

To achieve this, government commits to develop, publicize and monitor the implementation of universal standards and guidelines for accessibility of all public facilities and services (Government of Malawi, 2012). Furthermore, segregation or denial of services or benefits to people with disabilities is prohibited in section 24 of the Disability Act.

Nevertheless, Chilemba's (2013) analysis of the Disability Act shows that it is not in synch with the CRPD. Section 10 (b) of the Act states that ...”taking into consideration the special requirements of persons with disabilities in the formulation of educational policies and programmes, including the provision of assistive devices, teaching aids and learning support assistants." Chilemba noted that this list could be limiting, making the Act miss out on the CRPD's provisions on education and obligations of state parties.

Secondly, Chilemba noted that although the Act defines the concept of reasonable accommodation in Section 2, there is no further implication of the concept on people with disabilities. There is no mention of the concept even in Sections 10 and 11 where non-discrimination in education is recommended. This leaves people with disabilities with no legal basis to claim entitlement to the provision of reasonable accommodation, which is an element of the right to non-discrimination.

Chilemba stated that this is incongruent to the CRPD and recommends that the DA should be reviewed to amend sections on education to impose reasonable accommodation. It is very important that national legislation and policies should concretise the framework of rights and obligations for actors in the country. As stated by Emong and Eron (2016), reasonable accommodation is critical to achieving substantive equality for people with disabilities as stipulated by the CRPD. It is also noteworthy that the standards and guidelines referred to in section 8 (a) have not been developed to date. The lack of standards and guidelines is reflected in the haphazard service provision in institutions without any standard of access (Chaputula & Mapulanga, 2017).

Library services for students with disabilities in higher education in Malawi

The few studies that tackle disability in higher education in Malawi show serious marginalization of students with disabilities (Mambo et al., 2016; United Nations Educational Scientific and Cultural Organisation (UNESCO), 1988, 1999). There are no reliable statistics for students with disabilities enrolled in Malawi's public universities (Mambo et al., 2016). This can be attributed to the higher emphasis for education of children with disabilities in primary and secondary levels than tertiary levels (Braathen & Loeb, 2011). Enrolment of students with disabilities in higher education in Malawi remains very low as compared to the total population of people with disabilities (Mambo et al., 2016). Being such a minority group, students with disabilities in Malawi's public universities are vulnerable to numerous inequalities as their needs are likely to be overlooked. A study by Chaputula and Mapulanga (2017) on library services provision for people with disabilities in colleges and universities in Malawi revealed that some libraries have never considered services for people with disabilities because they do not anticipate any such users in their libraries. As a result there was serious lack .of information resources for people with disabilities in addition to inaccessible library infrastructure. This lack of services and resources compounds the educational disadvantages suffered by people with disabilities (Amstrong & Barton, 1999).

Mambo et al. (2016) observes that inaccessible library facilities and services are among the factors that keep students with disabilities away from universities in Malawi.

Another study by Kamchedzera (2017) on the response of Christian organizations to the needs of people with disabilities, students with disabilities lamented the lack of library resources in appropriate format for their use as one of the challenges they encounter.

Libraries find themselves squeezed between a rock and a hard place as they operate under minimal budgets (Chaputula & Boadi, 2010; Mapulanga, 2012; World Bank, 2010), while at the same time they must provide high quality services for all users.

The National Council for Higher Education (NCHE), a body responsible for accreditation of higher education institutions in Malawi, set the following minimum standards for academic libraries (National Council for Higher Education, 2015):

i. All buildings shall provide for special needs access
ii. Design and construction shall accommodate universal access
iii. Entrance doors and corridors shall allow for turning of a wheel chair
iv. Toilets should have special facilities for wheel chairs and their doors open outside
v. Library and learning resource centre shall have facilities that guarantee means to access library resources by all learners, including materials suitable for people with special needs

(National Council for Higher Education, 2015, p. 23).

As it may be observed, NCHE's requirements are not exhaustive and can be limiting as compared to the accessibility obligations outlined by the CRPD. However, it gives a starting point for academic libraries in Malawi to start thinking about accessibility issues. Standard (v) above empowers librarians to source accessible content for students with disabilities. This is in cognizance with the Marrakesh Treaty (Lewis, 2013), a World Intellectual Property Organisation (WIPO) initiative to increase availability of information resources for people with disabilities in developing countries, where only less than 1% of globally published content is available in alternative format (EIFL, 2017). However, librarians in Malawi will have an uphill task in implementing the CRPD's accessibility requirements due to the newly adopted copyright law which has introduced commercial availability test, which requires ascertaining the commercial availability before creating an alternative format copy (EIFL, AfLIA, & IFLA, 2017). This has been condemned by organisations such as Electronic Information for Libraries (EIFL), African Library and Information Associations and Institutions (AfLIA) and International Federation of Library Associations and Institutions (IFLA) as it contradicts the aim of the Marrakesh Treaty which Malawi herself signed in July 2017 (EIFL et al., 2017).

IFLA checklist for library services for people with disabilities (Irvall & Nielsen, 2005) is a good guide for all types of libraries worldwide, including academic libraries, in their endeavor to provide services for students with disabilities.

Browsing through the library websites of the four public universities under study, it is evident that disability issues are not given much thought as there are no accessibility and service statements. Hernon (2006) states that apart from illuminating significant services offered to students with disabilities, accessibility statements also indicate the library's commitment to service for such students.

Furthermore, going through the strategic plans of the four public universities, only Chancellor College (Chancellor College, 2014) and the Polytechnic (The Polytechnic, 2016), both constituent colleges of the University of Malawi (UNIMA), included services for students with disabilities in their strategic plan. The word 'disability' is conspicuously missing in the strategic plans of Lilongwe University of Agriculture and Natural Resources (Lilongwe University of Agriculture and Natural Resources, 2012), College of Medicine (College of Medicine, 2010), a constituent college of UNIMA, and Mzuzu University. The lack of awareness of disability issues as observed by Wazakili, Chataika, Mji, Dube, and MacLachlan's (2011) study on the social inclusion of people with disabilities in poverty reduction policies and instruments in Malawi and Uganda revealed a general lack of awareness of disability issues among civil society organisations and government. The same can be attributed to the non-coverage of disability in strategic plans for some of the universities. Failure to consider disability at the planning stage results in the creation of a hostile and unaccommodating environment for students with disabilities (Amstrong & Barton, 1999). A study by Majinge and Stilwell (2014) found that although libraries in Tanzania served people with disabilities, there were no policies addressing such services. Mostert (2001) emphasizes the role of policies in in coordinating acquisition, organization and dissemination of information. Mostert's study revealed that information policies did not exist in most African institutions. Seyama (2014) concurs with Mostert that policies are vital to ensure recognition of people with disabilities as potential and valued users of information; and their absence impedes library service provision. This concurs with Strnadová, Hájková, and Květoňová's (2015) assertion that institutional barriers are more disabling and segregating for students with disabilities than their disability.

Rugara, Ndinde, and Kadodo's (2016) study on library services and disability at tertiary and university libraries in Masvingo Urban in Zimbabwe, revealed that access to library stock in some libraries was through a flight of stairs, without a provision for an elevator for students with mobility problems; there was no software available for use by people with print disabilities; and neither signs nor sign language interpreter was available for those with speech and hearing impairment (Rugara, Ndinde & Kadodo, 2016, p.199). The findings are similar to those by Todaro (2005) in his study on library services for people with disabilities in Argentina. In their study on inclusion of students with disabilities in University of Mauritius, Pudaruth et al. (2017, p. 11) note that there is more awareness of laws on social justice and higher education than enhanced support and inclusion of students with disabilities in higher education. In South Africa, despite the government putting in place legal and policy frameworks to ensure participation of students in higher education, it has been found that higher education environment still poses a number of challenges for students with disabilities (Foundation of Tertiary Institutions of the Northern Metropolis, 2011; Matshedisho, 2007; O. Mutanga, 2017; Oliver Mutanga & Walker, 2017). In these studies, library infrastructure and services feature highly in posing accessibility challenges to students with disabilities. Seyama (2014) warns that availability of library services for students with disabilities is not enough, accessibility is the key issue. This is demonstrated by Phukubje and Ngoepe's (2016) study which revealed that students with disabilities faced challenges accessing information despite the library at University of Limpopo being built in conformance to the IFLA guidelines (Irvall & Nielsen, 2005). Students with disabilities cited challenges such as shortage of prescribed texts in accessible formats, unavailability of disability services librarian after working hours, inaccessible online catalog and lack of assistive devices. These challenges are also reflected in Chaputula and Mapulanga's (2017) study which revealed acute shortage of library services for people with disabilities in Malawi.

Countries in the west such as United States and United Kingdom have registered remarkable progress in library service delivery to people with disabilities.

Conclusion

The UNCRPD gives a beacon of hope for people with disabilities in their pursuit of higher education. Malawi government has moved a step forward in domesticating the UNCRPD by enacting the Disability Act. However, contextualization of the UNCRPD is yet to be achieved in as far as accessibility of academic library facilities and services is concerned. The standards and guidelines stated in the Disability Act must be actualized and enforced.

Librarians are duty bound to give a serious thought to accessibility of their library facilities and services. The minimum standards laid down by NCHE are a good starting point in introducing services for students with disabilities. Academic libraries services must extend to the whole student populace as denying such services to a section of the student population translates to denying them their right to education (United Nations Educational Scientific and Cultural Organisation (UNESCO), 1988).

References

Amstrong, F., & Barton, L. (Eds.). (1999). *Disability, Human Rights and Education*. Buckingham: Open University.

Association of College and Research Libraries (ACRL). (2016). *Documented library contributions to student learning and success: Building evidence with team-based assessment in action groups*. (K. Brown & K. J. Malenfant, Eds.). Chicago: Association of College and Research Libraries. Retrieved from http://www.ala.org/acrl/sites/ala.org.acrl/files/content/issues/value/contributions_y2.pdf

Bell, S. J. (2008). Keeping them enrolled: How academic libraries contribute to student retention. *Library Issues*, *29*(1), 1–4. Retrieved from http://www.libraryissues.com/sub/PDF2901Sep2008.pdf

Braathen, S. H., & Loeb, M. E. (2011). No disabled go here: How education affects disability and poverty in Malawi. In A. H. Eide & B. Ingstad (Eds.), *Disability and poverty: A global challenge* (pp. 71–91). Bristol, UK: Policy Press.

Chancellor College. (2014). Strategic plan for Chancellor College: 2014-2018. Zomba, Malawi: Chancellor College. Retrieved from www.cc.ac.mw

Chaputula, A., & Boadi, B. Y. (2010). Funding for collection development activities at Chancellor College Library, University of Malawi. *Collection Building*, *29*(4), 142–147. https://doi.org/10.1108/01604951011088871

Chaputula, A. H., & Mapulanga, P. (2017). Provision of library services to people with disabilities in Malawi. *South African Journal of Libraries and Information Science*, *82*(2), 1–10. https://doi.org/10.7553/82-2-1619

Chavuta, A., Itimu-Phiri, A. N., Chiwaya, S., Sikero, N., & Alindiamao, G. (2008). *Montfort Special Needs Education College and Leonard Cheshire Disability International Inclusive Education Project: Shire Highland Education Division- Malawi*. *Baseline Study Report*. Chiradzulu, Malawi.

Chilemba, E. M. (2013). The right to primary education of children with disabilities in Malawi: A diagnosis of the conceptual approach and implementation. *African Disability Rights Year Book*, *1*, 1–24. Retrieved from http://www.adry.up.ac.za/

Chimwaza, E. S. (2015). *Challenges in Implementation of Inclusive Education in Malawi: A Case Study of Montfort Special Needs Education College and Selected Primary Schools in Blantyre*. Diakonhjemmet University College, Oslo, Norway. Retrieved from https://brage.bibsys.no/xmlui/bitstream/handle/11250/2385760/Masteroppgave2015ChimwazaEmmanuelBlessings.pdf?sequence=1

College of Medicine. (2010). College of Medicine Strategic Plan: Towards 2020. *Strategic Plan*. Blantyre, Malawi: College of Medicine.

EIFL. (2016). *Knowledge without boundaries*. Retrieved from http://www.eifl.net/sites/default/files/eifl_ar_2014_hr.pdf

EIFL. (2017). EIFL calls on Malawi: Embrace spirit of Marrakesh. Retrieved August 4, 2017, from http://www.eifl.net/news/eifl-calls-malawi-embrace-spirit-marrakesh

EIFL, AfLIA, & IFLA. (2017). Malawi : embrace the spirit of the Marrakesh Treaty – no commercial availability test. Electronic Information for Libraries (EIFL). Retrieved from http://eifl.net/system/files/resources/201708/malawi_marrakesh_statement.pdf

Electronic Information for Libraries (EIFL). (2017). What can libraries in Malawi do under the Copyright Act (2016)?: Commentary and factual guide.

Emong, P., & Eron, L. (2016). Disability inclusion in higher education in Uganda : Status and strategies. *African Journal of Disability*, *5*(1), 1–11. https://doi.org/10.4102/ajod.v5i1.193

Eneya, D. D. (2008). A long walk to automation: Experiences and challenges of th University of Malawi Libraries. In B. Dione & R. Savard (Eds.), *Managing technologies in developing countries: Open source vs commercial options* (pp. 73–84). The Hague, Netherlands: International Federation of Library Associations and Institutions.

Foundation of Tertiary Institutions of the Northern Metropolis. (2011). *Disability in Higher Education*. Pretoria. https://doi.org/10.1787/9789264105072-en

Government of Malawi. (1971). Handicapped Persons Act. Zomba, Malawi: Government Print. Retrieved from https//dredf-org/legal-advocacy

Government of Malawi. (1998). *Vision 20-20: The national long-term development perspective*. Lilongwe, Malawi. Retrieved from http://www.africanchildinfo.net/clr/policy per country/malawi/malawi_vision2020_en.pdf

Government of Malawi. (2008). National Education Sector Plan: 2008-2017. Lilongwe, Malawi: Ministry of Education, Science and Technology. Retrieved from http://www.sdnp.org.mw/Education2010/FinalNesp.pdf

Government of Malawi. Disability Act (2012). Lilongwe, Malawi: Malawi Parliament.

Hanley, D. (2014). *Conceptualising disability in the workplace : contextualising the responses of managers and employees*. University of Central Lancashire. Retrieved from http://clok.uclan.ac.uk/10716/2/Hanley David Final e-Thesis %28Master Copy%29.pdf

Hernon, P. (2006). Context. In P. Hernon & P. Calvert (Eds.), *Improving library services for students with disabilities* (pp. 15–29). Westport, CT: Libraries Unlimited.

Hernon, P., & Calvert, P. (2006). Students with disabilities in higher education. In P. Hernon & P. Calvert (Eds.), *Improving the quality of library services for students with disabilities* (pp. 1–14). London: Libraries Unlimited.

Irvall, B., & Nielsen, G. S. (2005). Access to libraries for persons with disabilities - Checklist. *IFLA Professional Reports*, (89), 1–17.

Kamchedzera, E. T. (2017). An Investigation Whether and How Christian Organizations Respond to the Practical Needs of Students with Disabilities : A Case of One College in Zomba An Investigation Whether and How Christian Organizations A Case of One College in Zomba. *Journal of Disability & Religion*, *20*(1–2), 3–17. https://doi.org/10.1080/23312521.2016.1164651

Kenyon, J. (2009). *Access and Availability of Scholarly Information in Malawi, 1964-2007*. Indiana University. Retrieved from https://scholarworks.iu.edu/dspace/bitstream/handle/2022/6718/Kenyon_MAThesis.pdf?sequence=1

Lang, R. (2008). *Disability Policy Audit in Namibia, Swaziland, Malawi and Mozambique: Final Report*. London.

Lewis, H. (2013). Introductory note to Marrakesh Treaty to facilitate access to published works for persons who are blind , visually impaired , or otherwise print disabled. *International Legal Materials*, *52*(6), 1309–1320. Retrieved from http://www.jstor.org/stable/10.5305/intelegamate.52.6.1309

Lilongwe University of Agriculture and Natural Resources. (2012). Lilongwe University of Agriculture and Natural Resources Strategic Plan: 2012-2017. Lilongwe, Malawi: Lilongwe University of Agriculture and Natural Resources. https://doi.org/10.1002/ejoc.201200111

Majinge, R. M., & Stilwell, C. (2014). ICT use in information delivery to people with visual impairment and on wheelchairs in Tazania academic libraries. *African Journal of Library, Archives and Information Science*, *24*(2), 151–159. Retrieved from https://www.ajol.info/index.php/ajlais/article/view/135069

Malawi Government. (2007). National Policy on Special Needs Education. Lilongwe, Malawi: Ministry of Education and Vocational Training.

Mambo, M. M., Meky, M. S., Tanaka, N., & Salmi, J. (2016). *Improving Higher Education in Malawi for Competitiveness in the Global Economy*. Washington DC: World Bank. https://doi.org/10.1596/978-1-4648-0798-5

Mapulanga, P. (2012). Adequacy or inadequacy of budgets for University of Malawi Libraries (UML). *The Bottom Line*, *25*(3), 115–122. https://doi.org/10.1108/08880451211276575

Matshedisho, K. R. (2007). Access to higher education for disabled students in South Africa: a contradictory conjuncture of benevolence , rights and the social model of disability. *Disability & Society*, *22*(7), 685–699. https://doi.org/10.1080/09687590701659535

Mostert, B. J. (2001). African public library systems: A literature survey. Retrieved August 16, 2017, from http://www.libres-ejournal.info/wp-content/uploads/2014/06/Vol11_I1_mostert.pdf

Munthali, A., Tsoka, M., Milner, J., & Mvula, P. (2013). *From exclusion to inclusion, Promoting the rights of children with disabilities in Malawi*. Lilongwe, Malawi. Retrieved from https://www.unicef.org/malawi/MLW_resources_cwdreportfull.pdf

Mutanga, O. (2017). Students with disabilities' experience in South African higher education – a synthesis of literature. *South African Journal of Higher Education*, *31*(1), 135–154. https://doi.org/10.20853/31-1-1596

Mutanga, O., & Walker, M. (2017). Exploration of the academic lives of students with disabilities at South African universities : Lecturers ' perspectives. *African Journal of Disability*, *6*, 1–9. https://doi.org/10.4102/ajod.v6i0.316

National Council for Higher Education. (2015). Minimum Standards for Higher Education Institutions in Malawi. Lilongwe, Malawi. Retrieved from www.nche.ac.mw

National Statistical Office. (2010). *Population and Housing Census 2008*. Zomba, Malawi, Malawi.

Norwegian Federation of Organisations of Disabled People. (2004). *Living conditions among people with activity limitations in Malawi: A national representative study*. (M. E. Loeb & A. H. Eide, Eds.). Oslo, Norway: SINTEF. Retrieved from https://www.sintef.no/publikasjoner/publikasjon/download/?pubId=SINTEF+A2477

Ocholla, D. N. (2006). Information accessibility by the marginalized communities in South Africa and the role of libraries. In *IFLA/FAIFE Theme Report 2001: Libraries and the fight against HIV/AIDS, Poverty and Corruption, Seoul, Korea 22 August* (pp. 15–27). Seoul, Korea. Retrieved from http://www.lis.uzulu.ac.za/2006/Ocholla Faife ifla 2006 October 2006 6th.pdf

Oliver, M. (1990). *The politics of disablement*. London: Macmillan.

Phukubje, J., & Ngoepe, M. (2016). Convenience and accessibility of library services to students with disabilities at the University of Limpopo in South Africa. *Journal of Librarianship and Information Science*, *49*(2), 180–190. https://doi.org/10.1177/0961000616654959

Pudaruth, S., Gunputh, R. P., & Singh, U. G. (2017). Forgotten , excluded or included? Students with disabilities: A case study at the University of Mauritius. *African Journal of Disability*, *6*, 1–12. Retrieved from https://ajod.org/index.php/ajod/article/view/359

Research for Inclusive Education in International Cooperation. (2014). *Document analysis: Malawi*.

Rugara, T., Ndinde, S., & Kadodo, W. (2016). The right to information: library services and disability at tertiary and university libraries in Masvingo Urban in Zimbabwe. *International Journal of Learning, Teaching and Educational Research*, *15*(3), 191–203. Retrieved from http://www.ijlter.org/index.php/ijlter/article/download/558/281

Schulze, M. (2009). *A handbook on the human rights of persons with disabilities: Understanding The UN Convention on the Rights of Persons with Disabilities*. (Handicap International, Ed.). Vienna: Handcap International.

Seyama, L. G. (2014). *Information seeking behaviour of students with visual impairments: A case study of University of Kwazulu Natal, Pietermaritzburg*.

Strnadová, I., Hájková, V., & Květoňová, L. (2015). Voices of university students with disabilities : inclusive education on the tertiary level – a reality or a distant dream ? *International Journal of Inclusive Education*, *19*(10), 1080–1095. https://doi.org/10.1080/13603116.2015.1037868

The Polytechnic. (2016). The Polytechnic Strategic Plan: 2016-2022. Blantyre, Malawi: The Polytechnic Printing Press. Retrieved from www.poly.ac.mw

Thorpe, A., Lukes, R., Bever, D., & He, Y. (2016). The Impact of the Academic Library on Student Success: Connecting the Dots. *: Libraries and the Academy*, *16*(2), 373–392. Retrieved from https://muse.jhu.edu/article/613847/summary

Todaro, J. A. (2005). Library services for people with disabilities in Argentina. *New Library World*, *106*(5/6), 253–268. https://doi.org/10.1108/03074800510595869

UNESCO. (1994). *The Salamanca Statement and framework for action on special needs education*. *Policy*. Paris. https://doi.org/E D -94/WS/ 1 8

United Nations. (1948). Universal Declaration of Human Rights. New York: United Nations. Retrieved from http://www.ohchr.org/EN/UDHR/Documents/UDHR_Translations/eng.pdf

United Nations. (2006). Convention on the Rights of Persons with Disabilities (UNCRPD). New York: United Nations. Retrieved from http://www.un.org/disabilities/

United Nations Educational Scientific and Cultural Organisation (UNESCO). (1988). *Malawi: Higher education problems, needs and priorities*. Paris.

United Nations Educational Scientific and Cultural Organisation (UNESCO). (1999). *Provision for students with disabilities in higher education: A survey*. Paris: UNESCO.

Wazakili, M., Chataika, T., Mji, G., Dube, K., & MacLachlan, M. (2011). The social inclusion of people with disabilities in poverty reduction policies and instruments: Initial impressions from Malawi and Uganda. In A. Eide & B. Ingstad (Eds.), *Disability and poverty: A global challenge* (pp. 15–29). Bristol, UK: The Policy Press.

World Bank. (2010). *The Education System in Malawi* (World Bank Working Paper No. 182). Washington DC.

ACCESS TO INFORMATION & SERVICES BY STUDENTS WITH DISABILITIES: A CASE STUDY OF THE UNIVERSITY OF NAMIBIA

Chiku Mnubi-Mchombu
Coordinator/Senior Documentalist
Human Rights and Documentation Centre
University of Namibia

and
Ms. Ivone Tjilale
Administrator
Human Rights and Documentation Centre
University of Namibia

Abstract

In 2006, the United Nations adopted the International Convention on the Rights of Persons with Disabilities (ICRPD) to guarantee the promotion, respect and enjoyment of the rights of people with disabilities. In the same vein, the Namibian Government signed and ratified ICRPD on 4 December 2007 in terms of Article 144 of the Namibian Constitution, it is part of Namibian law and, therefore, it is binding. Furthermore, at national level, Article 10 of the Namibian Constitution states that everyone is equal before the law and no persons may be discriminated against in terms of the groups set out in Article 10(2). The main purpose of this study was to find out to what extent students with disabilities have access to information and other services as well as identifying barriers these students face at the University of Namibia (UNAM). The study used a methodological triangulation, which consisted of questionnaires, and semi structured interviews. The total sampled population comprised of 32 students with disabilities, 14 academics and 5 service providers.

The findings show there is awareness of the needs of student with disabilities at UNAM but facilities are inadequate. There is also a gap between the format of information provided to students and the information seeking behaviors. The study provides recommendations to UNAM on how to improve access to services and information for students with disabilities.

Keywords: *Access to Information; Inclusive Services; Disabilities; Higher Education Institution*

Background Information

According to the National Statistics Agency Report of 2011, Namibia has a population of 2,113,077 people. This includes 98,413 or 4.7% people with disabilities. Within that percentage, there are more females (51,125) than males (48,288) with disabilities in Namibia.

The Khomas region has the highest (45%) record of persons with disabilities followed by the Erongo region (33.1%), which may justify why more students with disabilities are located at the main Khomas region Campus.

The University of Namibia (UNAM) was established in 1992 under the University of Namibia Act 18 of 1992. It is the largest National institution of higher learning in Namibia with a population of 25,267 students (2016) and more than 446 lecturers.

Table 1: UNAM Total Population in 2016

Campus Name	Distance Programs	Full time/ Part-time	Grand Total	Student with disabilities	% students with disabilities
WINDHOEK CAMPUS	2196	11242	13438	**33**	**48**
HP CAMPUS		2243	2243	**5**	**7**
RUNDU CAMPUS	384	1746	1746	**6**	**9**
OSHAKATI CAMPUS	1054	630	1684	**2**	**3**
KHOMASDAL CAMPUS		1290	1290	**6**	**9**
KATIMA CAMPUS	257	1080	1080	**6**	**9**
SOUTHERN CAMPUS	176	568	744	**1**	**1**
SCHOOL OF MEDICINE		641	641	**0**	
ONGWEDIVA CAMPUS		304	304	**5**	**7**
OGONGO CAMPUS		295	295	**4**	**6**
NEUDAMM CAMPUS		181	181	**0**	
SWAKOPMUND	242		242	**0**	

CENTRE					
EENHANA CENTRE		214	214	**0**	
OTJIWARONGO CENTRE	144		144	**0**	
TSUMEB CENTRE	144		144	**0**	
HENTIES BAY RESEARCH CENTRE		92	92	**1**	**1**
GOBABIS CENTRE	75		75	**0**	
OPUWO CENTRE	40		40	**0**	
KHORIXAS CENTRE	29		29	**0**	
Grand Total	**4741**	**20526**	**25267**	**69**	

There are 12 Campuses nationwide and 9 regional Centers for Distance Education (CES). UNAM's vision is to provide quality higher education through teaching, research and advisory services to its customers with the view to produce productive and competitive human resources capable of driving public and private institutions towards a knowledge-based economy, economic growth and improved quality of life (UNAM, 2016) throughout the country.

According to 2016 records, the University of Namibia has a total population of 25,267, which includes 16,152 (64%) females and 9,115 (36%) males. Out of the total figure of 25,267, only 69 students have disabilities as per Table 1.

Based on these numbers (25,267), one would reasonably expect the number of students with disabilities to be higher. One of the reviewed reports indicated that the proportion of individuals aged 5 years and above that have, never attended school is 28.9%, based on the 2011 census. A majority (82.3%) of these are from rural areas while 17.7% are from urban areas. In terms of tertiary education, the proportion of persons with disabilities who completed tertiary education was 45.3% of the total recorded number, and from the Khomas region. In addition, the highest proportion of disabled persons with no formal education was from the blind and visually impaired group (Namibia Statistics Agency, 2016).

Article 20 of the Namibian Constitution states that all persons shall have the right to education and that primary education shall be free and obligatory for all children up to the age of 16. This means that urgent intervention needs to be considered by the government of Namibia in order to ensure children with disabilities receive primary, secondary and tertiary education, as is their right.

The Executive Chairperson of the Namibian National Association of the Deaf, Mr Nanyeni (2014) raised several issues on the plight of people with disabilities. One issue was that people with disabilities could only attend school up to Grade 10 because of lack of facilities to help them acquire an education beyond that point. In Namibia, there are only two schools for special education, which offer classes up to Grade 10. This means that people with disabilities are excluded from higher education. This can be another reason why there are few students with disabilities at institutions of higher learning.

Article 10 of the Namibian Constitution deals with equality and freedom from discrimination and prescripts that no person may be discriminated against. In addition, the Affirmative Action (Employment) Act of 1998 aims to address the injustices of the past, in order to place previously disadvantaged groups at the same level with other groups in society, for the full realization of their rights. Section 18 (c) of the Act provides for the rights of persons with disabilities. This means that every person has the right to enjoy all services without any discrimination.

Furthermore, Article 24 of the United Convention on the Rights of Persons with Disabilities (CRPD) (2006), of which Namibia is a party, recognizes the right of persons with disabilities to education in an inclusive education system. This means, all state parties need to offer education for persons with disabilities without discrimination.

Study Objectives/ Aims

The United Nations sustainable development goals that call to action to end poverty, protect the planet and ensure that all people enjoy their rights include provision of quality and inclusive education to all. Sustainable Development Goal 4 (a) provides:

Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all (UNDP website)

The study will investigate how students with disabilities enjoy their rights considering that Namibia is a state party to the CRPD. No study has been done in this area in Namibia, and specifically at the University of Namibia, to establish the extent to which the university's services are inclusive of students with disabilities. This study was conducted to address this gap.

Research objectives

- To find out to what extent students with disabilities access information at the University of Namibia
- To establish the extent to which students with disabilities access general services at the University of Namibia
- To establish which services are provided to students with disabilities at the University of Namibia by different service units
- To identify barriers students with disabilities face in accessing information
- To identify barriers facing students with disabilities in accessing services
- To identify challenges faced by different service providers at the university who provide information and other services to students with disabilities
- To formulate recommendations for the improvement of information and service' provision to students with disabilities

Literature Review

International and Regional Framework

People with disabilities endure the worst forms of social stigma in communities, with some disabled children hidden by their family members because they consider deformation shameful. Such children are denied their rights to education.

Several legal frameworks, which offer protection to people with disabilities, are discussed below.

Universal Declaration of Human Rights (UDHR)

The Universal Declaration of Human Rights in Article 19 expressly guarantees the rights to access information providing that:

> "Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers"

Furthermore, UDHR refers to accessibility by providing, in Article 21, the right to equal access to public services. Article 26 further provides for the need for tertiary, professional and higher education to enable equal access to all, based on merit (Ntinda & Mchombu 2014).

United Nations Convention on the Rights of People with Disabilities (CRPD)

Namibia ratified the United Nations Convention on the Rights of People with Disabilities in 2006. The convention plays a dual role; it is a human rights protection instrument and a developmental instrument to enable member states to better provide for the needs of persons with disabilities within their boundaries.

Article 24 of the Convention requires state parties to develop an inclusive education system at all levels, provide for reasonable accommodation for individual requirements and ensure that persons with disabilities are provided with "effective individualized support measures" to maximize their academic and social development.

The African Charter on Human and Peoples' Rights[1]

Namibia is a party to the African Charter on Human and Peoples' Rights (ACHPR) thus it has an obligation to take all necessary measures to ensure the rights of people with disabilities are protected. For example, Article 18(4) provides that disabled persons shall be entitled to special measures of protection.

---

[1] African Charter on Human and Peoples‟ Rights (1986) was ratified by Namibia on the 30/07/1992 and was deposited on the 16/09/1992.

National Level

The Namibian Constitution

The Namibian Constitution is the supreme law of the land according to article 1(6). The Namibian Constitution does not specifically provide for the rights of people with disabilities. It does, however, contain several articles that can be used to provide for the rights of people with disabilities to ensure equal opportunities and full participation in the socio economy of the country. Article 5 places a duty on the state, individuals and public and private institutions to respect and uphold the rights and freedoms enshrined in the bill of rights. Article 6, refers to respecting the right to life. Article 8 refers to the respect for human dignity and prohibition of torture or cruel, inhuman or degrading treatment or punishment and Article 10 provides for equality and non-discrimination.

National Disability Act no 26, 2004

Namibia only has a 1997 disability policy and does not have a disability act.The policy provides for measures to cater for persons with disabilities and the 2004 Disability Council Act provides for the means to implement the said policy. The 2004 Act and the scheduled policy provide for access to information in terms of section 3.4.1 and 3.11. (Ntinda and Mchombu 2014).

National Policy on Special Needs and Inclusive Education 2013

This policy seeks to address the needs of marginalised groups with special reference to children with disabilities. The policy refers to Article 24 of the CRPD, which urges member parties to adopt the principles of inclusive education. At the university level. a high number of students with disabilities are expected but due to lack of accessibility like “universal design” infrastructure, the University of Namibia can only enrol a few. The study by Nakuta (2013) found that the University of Namibia is not yet ready for students with disabilities although there are policies that should enhance access to tertiary education for people living with disabilities.

Ministry of Education Strategic Plan 2012-2017

The five-year strategic plan of the Ministry of Education calls for an accessible and equitable Inclusive Education System.

Access to Information

A Baseline study on human rights in Namibia noted that people living with disability face various problems, which include lack of employment, lack of access to education and lack of resources. The study found that teachers are not properly trained or equipped to deal with children with disabilities. This sometimes results in disabled learners being excluded, because they are viewed as slow. The study also noted that most schools have no sign (language) interpreters, no proper structures for people living with disabilities, and information is not accessible due to lack of braille and audio materials. The study also found that the Disability Unit at the University of Namibia is not well equipped.[2]

Seyama at el. (2014) noted that lecturers preferred to present information in PowerPoint, which JAWs software cannot read. In addition, student notices on campus were distributed as flyers and pamphlets, which blind and visually impaired students could not access. Furthermore, postgraduate students could not access databases because the computers did not have the JAWS software installed. Access to information is very important to students with disabilities in order for them to fully participate in the learning process of an institution.

Mr Nanyeni (2014), the Executive Chairperson for the Namibian National Association for the Deaf, once alluded that people with disabilities want access to braille and alternative communication, and all other accessible means and modes and formats of communication.

Access to education is very important in order to help people become better citizens. As Schur et.al (2013) notes that education is important to enable people to get better jobs, higher incomes and engage in political participation. Thus, people living with disabilities have a right to education so that they can make meaningful contributions to society.

Access to Services

Access to assistive technology and other learning support is critical to the success of students with disabilities in post-secondary education. Stodden et al (2001) defined assistive technology as that which includes any device, low or high tech that enhances the capability of a person to function in his or her

---

[2] J Nakuta. Baseline Study Report on Human Rights in Namibia (2013).Windhoek: Ombudsman Namibia.

environment. These devices and services, when used accordingly, can improve the physical and intellectual capabilities of individuals with disabilities. The authors noted that the increased number of students with disabilities enrolled in higher education institutions has been partly due to the use of advanced technological devices and services.

A study on access to educational and instructional computer technologies, which was done in Canada observed the following: As institutes of higher learning adopt campus-wide computer systems and networks, it is important to consider accessibility for students with different impairments, most of the time this is not a priority. In some cases, CD-ROMs have small print or very light background, which cannot be changed; video clips lack captioning; and internet websites have small screen sizes (Fichten et al.2000).

A study by Majinge and Stilwell (2015) on students with disabilities in Tanzania found that students in wheelchairs were not able to access many buildings on campus without being carried due to the unfriendly environment .They suggested that universal design in the early stages of planning helps to make the environment friendly and other services accessible to everyone. For example, too many stairs with no option of using a lift or ramps prohibit students with disabilities from accessing classes, the library, restaurant, dormitories and other services.

The study by Fichen et al. (2000) on access to educational and instructional computer technologies in Canada found that despite the advantages of using computer technologies, barriers could also be created. In this particular study, the barriers included: high cost which prevented students from using computers; attitudinal problems, for instance, a student wanted a computer to help take notes, but the lecturer refused and other students did not like it.

Disability Models

There are three models, which are used to understand the relationship between individual impairments and the environment. These are the Medical model, Social model and Universalist model.

The Medical model is a traditional view of disability, which focuses on functional impairments and health conditions. This model places importance on cure, without taking into account other factors such as social factors like discrimination. It puts responsibility on the individual with disability to overcome their disability through hard work, positive attitude and determination (Schur et al. 2011). Majinge and Stilwell (2015) who state that the Medical model regards disability as caused by disease, trauma or health conditions, which requires medical care.

Oliver's Social Model of disability (1996 & 2004) believes that disability is caused by society. As opposed to the Medical model, which believes that disability is located within the individual, the Social model maintains that disability is the interaction between the individual and the environment, and disability alone is not disabling. The Social model distinguishes between impairment and disability and thus, identifies the source of stigma and discrimination in society and provides the targets for political action. Seyama et al (2014) and Majinga and Stilwell (2015) summarised disability as a condition that is created socially. Features of the social environment, people's negative attitudes and an un-supportive physical environment cause the barriers of access for people with disabilities.

Schur et.al (2011) noted the advantages of the social model such as identifying a political strategy; removing barriers; and empowering people with disabilities by understanding social oppression. On the other hand, the model has been criticised for marginalising the experiences of minority groups such as women with disabilities; gay men and lesbians; and people from certain ethnic groups. Some authors have also criticised the model for failing to take into consideration other factors, apart from the environment, that cause disability, such as pain, fatigue and other physical and mental difficulties. In addition, not all people with disabilities are oppressed.

The Universalist Model proponents believe that every person experiences limitations and impairments, and those who do not experience disabilities currently, are referred to as temporarily able-bodied (Schur et al. 2011). Disability issues are considered as universal and not minority issues. The model maintains that every human being will experience disability at some point of his or her life. For example, the advantages of universal design and anti-discrimination laws are for everybody. Human beings are different and have a wide range of responses to disability issues and experiences.

Research Methodology

A semi-structured interview instrument was designed and used to gather data from students identified through the University of Namibia's Disability Unit. In this paper, disability shall be broadly defined to include visual impairment, hearing impairment; and physical impairment. The survey instrument was shared with the Disability Unit for scrutiny and then it was piloted, after which questions were revised. The instrument designed for lecturers and service providers were piloted.

The study used a qualitative research method based on the interpretive research paradigm to capture the changing reality of students with disabilities at UNAM, in the context of access to information and services (Blanche and Durrheim, 2014).

A list of students with disabilities was obtained from the Disability Unit of the University of Namibia to establish eligible participants for the study. The Disability Unit staff members were also interviewed, as well as selected lecturing staff. Students with disabilities who were interviewed recommended the lecturers.

Based on the findings, the study formulated recommendations on how to improve the provision of information and services to students with disabilities at the University of Namibia.

Participation in this research was voluntary. Measures were taken to avoid harming participants in anyway, either physically or emotionally. Participants were provided with full information on the objectives of the research and told to feel free not to answer any questions they were not comfortable answering. The protection of the participant's identity was assured. The Human Rights & Documentation Centre worked closely with the Disability Unit to ensure that all students with disabilities were involved in the study.

Sampling

The sample size of the study consisted of 51 respondents from different faculties of the University of Namibia. These included 32 students with disabilities; 14 lecturers from different faculties who were suggested by students with disabilities; and 5 service providers.

The University of Namibia has 69 students with different disabilities across all campuses. Using cellphone numbers provided by the Disability Unit, requests for interview appointments were made directly to the students. Face to face interviews were conducted with students who studied at the main campus (Windhoek) and Khomasdal campus. Those from other campuses were interviewed telephonically and, in some cases, through their sign interpreters. This study interviewed 32 students with disabilities from all UNAM campuses, which amounted to 46% of the population.

Questionnaires were also sent to 35 lecturers who were identified by students from different campuses. Only 14 (41%) lecturers responded. Additionally, questionnaires were sent to 7 service providers identified by the researchers and 5 (71%) providers responded.

Data analysis

Qualitative data derived from in-depth interviews was tabulated under related themes, concepts and subheadings.

The Statistical Package for Social Sciences (SPSS) was used to analyze data collected from closed questionnaires. The data was recorded in spreadsheets and statistical graphics for visual presentation of the results.

The results of the qualitative and quantitative analysis were summarised consolidated and presented as the survey findings.

Findings - Students Living with Disabilities

Section A - Demographic Information

Gender

The study showed that there were more female students (20) than male (12), making up 63% and 37% of the student respondents respectively.

The age group of participants ranged from below 20 years to 36 years and above. The majority, 13 (45%), of respondents were students aged between 21-25 ; followed by 5(17%) below 20 years and 31-35 years respectively; and finally, 3 respondents did not indicate their age in the study as shown in table 2.

Table: 2 Age group of students
N=32

	N	%
<= 20	5	17
21 – 25	13	45
26 – 30	3	10
31 – 35	5	17
36+	3	10
Total	29	100.0

The study had 15 lecturers participating in the research, 7 (47%) males and 8(53%) female. The majority of respondents were between 35-39 years of age, but 1 lecturer did not indicate age group.as per table 3 below.

Table: 3 Gender and Age Group of Lecturers N=15

		N	%
Gender	Male	7	47
	Female	8	53
	Total	15	100.0
Age group	<= 34	2	14
	35 - 39	4	30
	40 - 44	2	14
	45 - 49	2	14
	50 - 54	2	14
	55+	2	14
	Total	14	100.0

The respondents (lecturers) were from five faculties: Agriculture; Economics and Management Science; Education; Faculty of Humanities and Social Sciences; and Law.

The study sought to find out students with disabilities' mode of study. The majority, 23 (74%), of the participants were enrolled on programmes on a fulltime basis, while 8 (26%) were registered as part time students on the distance mode, and one student did not indicate mode of study.

The University of Namibia service providers who are non-lecturers also took part in the survey. Five (5) service providers from different centres/faculties took part in the study. One faculty officer from the faculty of Humanities and Social Sciences; one senior student record officer from the registrar's office; one librarian who deals with disability issues; one faculty officer from the Faculty of Law; and one coordinator from the Disability Unit, Dean of student affairs office.

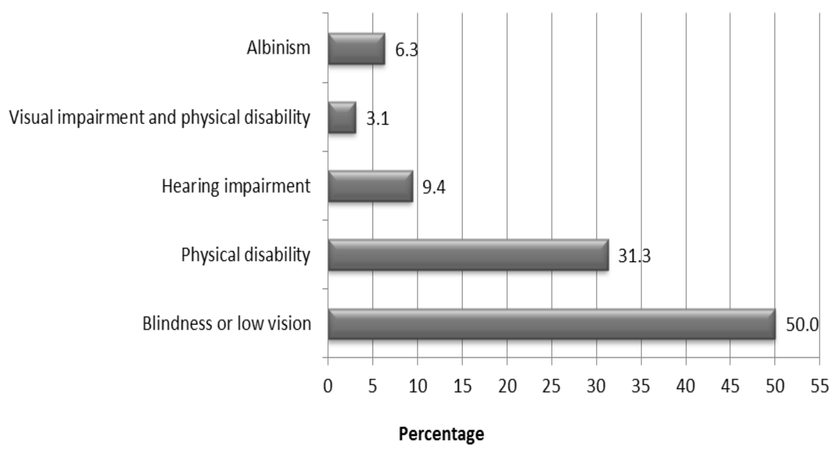
The services offered by these centers/units/faculties include:

Unit/ Faculty/Centers	Responsibilities
• Faculty officer	Advise the Dean, Head of Department (HOD) and staff on all academic administration
• Senior Student Record Officer	Responsible for the preliminary selection of administration
• Faculty Administrator	Deals with student administration
• Disability Unit	Coordinate disability issues as well as advocacy and awareness at the University
• Librarian	Ensure needs of students with disabilities Are taken care of when entering the library

Year of Study

The majority, 15 (47%), of respondents were in their second year of study, followed by first years with 8 (25%) respondents, 4 (12%) in third year and 5 (16%) in their fourth year. It seems that in 2015 there was a good campaign to admit students with disabilities at the University of Namibia.

Figure 1: Percentages of type of impairment



This study found that half of the respondents, 16 (50%), were blind or had low vision, followed by 10 (31%) who were physically challenged, while 3 (10%) had hearing impairment, 2 (6%) were students with Albinism and 1 (3%) had both visual and physical disability. These findings should give an indication to the university community that whatever information to be disseminated on campus should take cognizance of students who are blind or have low vision.

The study also asked a question to find out at which UNAM campus/centers respondents were located. The study revealed that the majority, 23 (71.9%), of respondents were at the Windhoek Main Campus and a few, 2 (6.3%), were found in Ogongo; Southern Campus and Khomasdal Campus; while the Rundu; Hifikepunye Pohamba and Oshakati Campuses each had 1 respondent.

The study wanted to find out which programmes/disciplines the students were pursuing.

Table 4: Discipline or course registered for

	N	%
Secondary education	1	3.1
Diploma in Library & Information Science	2	6.3
Diploma in Accounting & Finance	1	3.1
Diploma in HIV/Aids Management & Counselling	2	6.3
Computer Science	1	3.1
Higher Diploma in Natural Resource Management	2	6.3
Diploma in Life Long Learning and Community Education	1	3.1
Diploma in Junior Primary Education	1	3.1
Majoring in languages English & Oshindonga	1	3.1
Bachelor of Accounting (honours)	2	6.3
Bachelor of Education	7	21.9
Bachelor of Arts	2	6.3
Bachelor of Education (Adult Education and Community Development)	2	6.3

Bachelor of Law	2	6.3
Degree in Life Long Learning (Adult Education)	1	3.1
Bachelor of Social Work	1	3.1
Bachelor in Media Studies	2	6.3
Bachelor of Science (Population Studies)	1	3.1
Total	32	100.0

The results showed that students were enrolled on different programmes at the university with the largest group of 7 (21.9%) studying for a BA Degree in Education. Unfortunately, there was no student doing Medicine or Engineering.

Section B- Access to Information

The study wanted to find out how students access information from the UNAM portal. The findings revealed that some students used more than one option. A significant number of respondents, 14 (33%), used personal computers but they did not indicate if they were using special software ; 8 (19%) used the university's library computes; while 6 (14%) used personal computers with speaking software (JAWS and NVDA); and 6 (14%) of the students had to ask for assistance from friends/colleagues if they wanted to access the UNAM portal; 4 (9%) used their cellphones which they indicated had talking features; 2(5%) used the Disability Unit computers; and 1(2%) used a laptop using the zoom text programme or MS Office Magnifier. It is distressing to see students with disabilities depending on other students to access information from the portal. Measures need to be taken to ensure that these students can access vital information from the portal independently.

The study also sought to find out how disabled students access the library to get academic materials. The findings are as follows:

Table 5: How do you access academic materials in the library?

	Resp	Col R %
Go to the library and search for the books relevant to my course	5	11.9

I borrow books from the library (just like any other student)	6	14.3
Use the Internet to search for E-Books/ use OPAC	2	4.8
Use the computers to download relevant information for my studies	1	2.4
Ask the library assistant for information I want, e.g. from the Internet	1	2.4
Normally borrow books for an hour because I cannot carry books home	1	2.4
Search for the material in the library system	1	2.4
Ask a friend or librarian to find the material I want for me physically	3	
Go with an assistant to the library and they find the materials I request	1	2.4
I know what journalism books I need, so I get whatever material I need from the relevant section	1	2.4
Use OPAC to search for material I want and then pick the materials from the shelf	1	2.4
Don't use the library because it is a struggle to find someone to get the materials for me	1	2.4
Only visit the library when there is a friend to assist me; other than that I don't go at all	1	2.4
UNAM library is not user friendly, climbing stairs is exhausting and elevators do not work	3	
I use the public library because the UNAM library is inaccessible due to stairs and the lifts are restricted (locked)	1	2.4
Never use the library because they have no electronic material that is audio-typed or readable by Jaws software	1	2.4
Don't use materials from the library, only for extra reading	1	2.4
I don't go there at all because they don't provide braille material	5	11.9

I don't usually go there because they don't have books for my field of study	1	2.4
Always have to be accompanied by someone to pick material for me, that's why I don't use it at all	1	2.4
Library in Lüderitz is far from my home and there is no one to take me	1	2.4
Don't access library material as it's hard to find someone to read a print book to me, everyone is busy with own studies	1	2.4
Go with someone because I have to use the elevator; need them to press the floor number or push the wheelchair	1	2.4
It is a challenge, only use it sometimes because I can't walk properly	1	2.4

The shocking results showed that only 11 (26%) participants could go to the library and borrow materials without a problem, but the rest had difficulties due to several reasons. Some, 5 (12%), said there were no braille materials; 3 (7%) could only access the library if they had somebody to help them with the lifts, e.g to press the buttons, and regarding the lifts, some mentioned that they did not work. Other respondents said they could not use the library because it was far; there was no speaking software available in the library; and they needed somebody to read for them.

Participants were also asked how they access the University Of Namibia Website.

Use my personal laptop	18	43
Use the library computer	5	12
Use computers at Disability Unit	2	5
Use my cell phone	4	10
Through my friends and colleagues because I am not computer literate/ Don't use it because there is no one available to direct me on how to use it	7	17
Not interested in the website	1	2

Use my personal laptop using zoom text programme or MS Office Magnifier	1	2
Hardly access the website because I don't have a laptop	1	2
Use my personal laptop with speaking software (NVDA) /JAWS	2	5
Trying to access it with the Jaws software, hopefully I will master it with time	1	2

It is very encouraging to see a majority of respondents, 18 (43%), use their own laptops, but more needs to be done in order to empower students with disabilities with computer skills as 4 (10%) of respondents indicated that they were not computer literate.

The study wanted to find out what problems students with disabilities face when trying to access the UNAM portal. The results are as follows:

Table 6: What are the barriers/problems you are facing in getting the information from the UNAM Portal?

	Resp	Col R %
The wireless/ Internet is (always) slow	5	
Don't access it because I don't know how to use the Internet	1	3
When the computers are occupied	1	3
If my friends/ colleagues who usually help me are busy, it becomes a challenge	1	3
Can't access the Internet all the time	1	3
Challenge to find someone to download notes for me; I am computer illiterate	1	3
There are only PowerPoint or PDF documents that are not readable by Jaws or screen readers	2	6
Get an abled person to assist me because I can't use the computer mouse like abled students	4	

Have not mastered the skill of using short cuts to get to the portal	1	3
Problem with password which is reset without informing me	3	
No problem	15	43

At least 15 (43%) students responded positively by stating that they have no problem accessing the UNAM portal, but some indicated that they faced problems like needing somebody to help them. One indicated that their password was reset without their knowledge. Some respondents said they were computer illiterate and others indicated that they had problems with PowerPoint or PDF documents because are not readable by Jaws or screen readers.

Respondents were also asked what problems they faced in accessing the library. The following were the responses:

Table 7: What are the barriers/problems you are facing in getting the information from the Library?

	Resp	Col R %
Difficult for me because of the stairs	3	8
Due to my disability I don't get enough information	1	3
I don't go to the library	1	3
Books or notes are not available in braille	7	18
Sometimes specific books are not available	1	3
Don't use library material because there are no electronic materials, only print materials	1	3
Unable to use the library when there is no one available to take me	1	3
No access to library because the elevators are not working	2	5

Library material is not available on audio or MP3, only in black and white	2	5
Challenge to find someone to read print material to me	4	10
Don't access the library, it is too far from my house	1	3
Not aware of library staff who deal with disabled students that have a problem	1	3
Don't find someone at the library basement to help us with the lift	1	3
Would be helpful for visually impaired students if the stairs at the library would be shaded to separate them visually	1	3
No problem	13	32

Less than half of the respondents, 13 (32%), indicated that they had no problems accessing the library, but the rest faced various challenges to access the library. It is important to note that these are students from different campuses though the majority are from the Windhoek Campus.

Respondents were asked who they consult when they face a problem.

The study revealed that 21 (34%) consulted their friends/fellow students; 17 (28%) their lecturers; and 11(18%) consulted the Disability Unit; while 12 (20%) consulted other sources. The majority of the respondents depended on their colleagues and friends for their information needs. There are a few respondents who consulted the Disability Unit and the reason may be that it is only available in Windhoek meaning that those in the regions have no access to it.

Section C: Access to Services

Respondents were also asked if they were aware of any unit or department that assisted students with disabilities. The study found that 22 (69%) of the respondents were aware of the existence of the Disability Unit, while 10 (31%) were not aware of any unit or department that assisted students with disabilities.

The study also wanted the respondents to name the specific units/departments that provide services to students with disabilities. The majority, 21 (65%), mentioned the Disability Unit and 11 (35%) did not mention any unit. The reason might be that some students were located in other campuses and were not registered with the Disability Unit.

Respondents were asked how they knew about the Unit. The majority, 23 (85%), mentioned different sources as provided in the following table, while 4 (15%) were informed by their friends.

Table 8: How they knew about the Unit

By myself because I became blind while studying at UNAM	1	4.3
During first year orientation	2	8.7
Faculty officer, Mr. van Wyk	1	4.3
Family members	1	4.3
From the radio	2	8,7
Head of the Disability Unit, Mrs. Kandji	6	26
Mr. Toivo, WHK Tech. High School	1	4.3
Notice board	1	4.3
OPM, I was one of those who formed the unit	1	4.3
Saara, assistant co-ordinator at the Disability Unit	3	13
Through a meeting at our school	1	4.3
UNAM website	1	4.3
Was told by Mr. Levi	1	4.3

The study wanted to find out the type of services received by the respondents. The list of services is shown in the following table:

Table 9: Service/ support received from these unit(s) or department(s)

	Resp	Col R %
Provide counselling to students (social workers)	4	9.1
Accommodation	2	4.5

Transport from the gate to campus	1	2.3
Provide academic information	1	2.3
Scan and convert material into electronic format	1	2.3
Provide separate computer course with special programmes	1	2.3
Interpret graphs	1	2.3
Typing services	1	2.3
Escorts	1	2.3
When you are in pain they give a cream to help calm the pain	1	2.3
They always enlarge my question papers in large fonts/ script enlargement	2	4.5
Not yet received anything from them	2	4.5
Provide test and examination venue (for extra time)	7	16
Access to computers	1	2.3
Even personal problems	1	2.3
Study services	1	2.3
Internet services	1	2.3
Do my assignments there in case I cannot access the library	1	2.3
Assistance with UNAM registrations	5	11.4
Convert academic material to braille	7	15.9
Help with any problems experienced by disabled students	1	2.3
Give important notices, e.g. about meetings	1	2.3

The study wanted to find out how easy it was to access services on campus. The majority, 20 (52%), indicated that it was difficult and 11 (48%) indicated that it was easy. These findings show that it is not easy for students with disabilities to access services on campus.

The respondents were asked if they sometimes needed information to cope with their challenges in life and the majority, 21 (70%), said yes, while 9 (30%) indicated no and 2 did not indicate anything.

The respondents were asked to explain their rating on access to services. Those who rated easy to access had the following to say:

Table 10: Easy to Access

I can do whatever an abled (normal) person can do	1
It is fast and user friendly, for example, accessing the portal	1
Always get assistance from my friends	1
The Disability Unit always enlarges the font of my question papers for me to read	1
Disability Unit assists if I have a problem	2
It's very easy because I just need to log in on the UNAM Portal to have access to anything I want, e.g. notes	1
Once you sign up with the Disability Unit, getting access to information is easy as you just have to walk there	1
They provide us with information regarding our course	1
Disability Unit coordinators are always available when needed, their phones are always on	1
In case of emergency, UNAM provides transport to main campus in order to talk to the coordinators personally	1
It's easy for me because I write examinations with other students and don't have to go through procedures to get a venue	1
I get extra time if I don't finish writing my examinations on time together with the other students	1
I have not come across a problem yet	1
Total	14

Table 11: The respondents who rated 'difficult to access' services had the following to say

More could be done for disabled students, such as separate classrooms, transport around campus etc.	1
Because of my hearing impairment, I have problems following lectures and getting support from lecturers	1
Students with visual & physical impairments face more challenges as they are dependent on assistance to access services	1
Fear of judgement by peers hinders the provision of a service if one is not comfortable with one's disability	1
Question competence of braille examination markers as answers given in the examination do not correspond to final mark	1
Due to inaccessible lecture venues at Block X and Y (elevators out of order), I study by myself but fail academically	1
Students with disabilities are a minority that are not always considered when providing services such as notice boards	1
Important notices on notice boards on campus/ on lecturers office doors are not accessible to the visually impaired	1
Inclusive education disadvantages the visually impaired who receive notes that are not in braille or readable by Jaws	2
Some lecturers are insensitive to the needs of visually impaired students, e.g. display notes using a projector	1
We are not aware of the services we are supposed to get from the DU, only found out by chance	1
Fellow students don't help to get library books on the shelves that I can't reach	1
I am always late for class because the elevator does not work and I have to use the stairs	2

I don't have a hearing aid so it's difficult for me to access some services	1
I don't get enough time to finish writing my tests	1
Difficult to access classes/ other services because many of the campus buildings have stairs	2
At the library I don't get information on time because I have to use the stairs	1
Need free access to the gym because without exercise my academic performance gets affected	1
Some lecturers are rude when I ask for a soft copy of the notes; others are helpful	1
Sometimes experience problems in accessing material at CES because the staff refuse to give us books	1
Difficult to access the services provided because of dependence on specific person to assist who is not always available	1
Dependency of assistance from others is a problem; sometimes have to pay someone to help me	1
UNAM portal and website are not user friendly for the visually impaired; need assistance from someone to access these	1
Important notices on notice boards on campus/ on lecturers office doors are not accessible to visually impaired	1
Difficulties in editing our assignments	1

The study wanted to find out if the respondents experienced problems in accessing services. The findings showed that 17 (61%) of the respondents did experience problems while 10 (35%) did not experience any problems and 1 (4%) respondent experienced problems sometimes. There are 4 respondents who did not respond to this question.

A follow up question was asked to find out how respondents solve their problem(s). The responses were provided as follows:

Table 12: If 'Yes' or 'Sometimes', what did you do to solve the problem(s)?

	Resp
I always to speak to other students to ask for assistance	1
I always send someone to help me, e.g. borrow books for me from the library	1
Complained to the SRC about fixing the elevators and providing free access to the gym	1
I always report the problems to the Disability Unit	1
Access the portal using the computers at the Disability Unit or use my cell phone	1
Employ more people that can assist with braille notes as this service is very slow	1
I approached the Student's Council but they are not familiar with the Disability Unit	1
I have spoken to someone about the cars that block the pathways for wheel chairs; she is busy finding a solution	1
In order to use the lifts at the library, I would ask a fellow student to tell the staff to open the door to the lifts	1
As a distance student, it is a process to get the key to the lifts at the library	1
I have to rely on volunteers (who are not always available) from the DU to escort me to different campus places	1
I have done nothing to solve the problem of unavailable volunteers to escort me	1
Nothing was done about the problem I reported to the DU about receiving notes late & finding someone to read them to me	1
Reported my hearing problems with lectures to DU coordinators who said they would talk to the lecturers; nothing happened	1
Consulted lecturers, faculty deans, ODS about my academic failure due to inability to attend classes, but there was no solution	1

I am sure the DU is aware of the challenges faced by students with disabilities but nothing is being done	1
I spoke to the Khomasdal SRC and now I get extra writing time during exams due to my physical disability of my arm	1
I did not do anything about the de-brailling of examination answer sheets; it is just a thought I always had	1

The study wanted to find out if the students needed additional information to cope with their challenges. The majority, 21 (65%), indicated that yes, they need additional information and 9 (28%) indicated that no, they did not, and 2 respondents did not indicate anything.

The respondents were asked to give the reasons why they needed additional information. The following where the responses:

Table 13: If yes, for what reasons do you need more information?

	Resp
More information about the DU and the services offered/ provided for us	2
Information to be aware/ updated with what is going on around the world	4
Information about where to get previous question papers	1
Information on how to keep healthy (carry too heavy things like laptop which doctor forbade)	1
Information on how to complete my school work	1
Need more information in order to catch up with my studies because I only depend on listening	1
More information on how to use computers, because every time I have to ask someone to help me	1
What procedures to follow for the handing in of late assignments due to illness & inability to see doctor	1

Information on who to talk to about my personal life and how to deal with the stigma of being disabled	2
Information (books) and counselling on how to deal with depression and loneliness as a result my disability	3
Information related to my disability and how I can cope with it on a daily basis	3
Learn about ways to lead a social life apart from academics as a disabled student, e.g. joining a sports club	1
Need more information on how to study and pass on my own because my hearing impairment affects my grades	1
I need to know who the right person is to talk to about my struggle with my studies; so far nobody could help	1
Information on how other visually impaired people live their lives in order to motivate me to keep moving forward in life	1
Need assistance in being confident about myself, e.g. take part in campus activities without fear of what other students think or say	1
Information on assignments as I only rely on study guides and library material my friends get for me	1
Need vocabulary and spelling lessons in braille to improve my English	1

Suggested ways to improve access to information by respondents

When respondents were asked for suggestions on how to improve access to information for disabled students, a wide range of suggestions were made but there was no clear consensus. The most popular suggestions made only by three (3) respondents each were the following i) library materials should be available in braille and audio format ii) an increase in the number of computers in the library with the talking software JAWS. Slightly fewer respondents, at two (2) each, suggested as follow i) UNAM should provide a platform where disabled students can obtain important information ii) lecturers should provide soft copies of lecture notes to students who have visual impairment iii) SWD should have security key to the library basement so they can use the lifts in the library iii) DU and library should provide more computers. There was a lengthy list of suggestions, made by one respondent each, touching on a wide range of issues, including: notice boards should have a device to read all announcements for blind students, UNAM website should be improved to make it disability students friendly, UNAM staff members should be aware of the needs of SWD, employ staff with disabilities who can ensure that SWD are helped more efficiently, provide more computers for SWD, more reading materials, and more laptops for SWD, sign language

Lastly, respondents were asked to suggest how access to services for students with disabilities can be improved. The following were their suggestions:

Table 14: Suggestions on how access to services for students with disabilities can be improved

	Resp
Investigate whether all students with disabilities receive the right service at the right time	1
Solve the parking problems, i.e. cars block the special pathways for SWD such as the entrance to the study centre, preventing the students from accessing the services	2
Repair the elevators on campus so SWD (especially those who are wheel chair bound) can access all floors (and do not have to be carried with the risk of falling)	4
Student assistants at the DU should be prevented from using computers reserved for SWD	1
When ordering material, UNAM should strive to cater for every type of disability	1
Provide more assistants who can help us access services that we cannot access on our own	2
UNAM should build wheelchair friendly buildings	1
Extend the interval between classes because 5 minutes is not enough for me to walk from the computer centre to science block	1
Review examination time table to include enough resting and revision time between examinations for SWD (physical disabilities)	1
Classes for visually impaired should be on the lowest floor	1

UNAM should employ the lecturers who are aware of the needs of blind students and can provide what they need	1
Employ more staff at the DU; currently it is understaffed and not every student is assisted on time	3
In future, UNAM should consider the fact that the taxi ranks are far from the hostel; have to compensate (pay) security guards to walk us to our rooms	1
Provide separate bathrooms for SWD at the hostel	1
Create/ promote awareness of SWD needs amongst other students, e.g. visually impaired to sit in front row	1
The DU should extend their opening hours to give SWD enough time to complete their study work	1
The DU should have full time assistants	1
Have local experts that repair the photocopy machine because currently we have to wait for experts from South Africa	1
DU should deliver services on time so that SWD can benefit from these	1
Consultations by faculty (officers) with SWD on an individual basis will improve service delivery as awareness of the needs of SWB can be established and fostered	1
To prevent abuse of lifts by other students, management could issue access cards for SWD only	1
SWD should be able to use online payment facilities to avoid stressful queuing, especially for students with physical disabilities	1
If the elevator problem is not attended to, SWD should pay less tuition and service fees as the service they pay for is not provided	1
Provide private transport for physically disabled student to move around campus (because not every student can afford a wheel chair)	1
Provide private transport for other SWD to move around campus as, for example, there is not always someone to guide visually impaired students	1

Living with disability is costly ; therefore consider reducing service costs, e.g. reduce the cost of enlarged printing for visually impaired	1
SWD should be allowed to go directly to offices or departments without having to queue like other students	1
Instead of having to wait for someone, SWD should be handed the keys to the resource rooms at the DU so that they can complete their study work on time	1
Wheel chair pathways should be provided for students with physical disabilities for them to be able to access the library or study centre	1
Entrances to classes, study areas and other resource centres should be made disability friendly to make the study environment for SWD more comfortable	1
UNAM should consider establishing a DU at Khomasdal Campus to enable immediate provision of services	2
UNAM should create a platform where SWD are made aware of the type of services available and the person responsible for providing them	1
Improve awareness of services for SWD, e.g., visually impaired students should be aware of who to approach in the library to help them operate the computers	1
Rather than getting discouraged from using the library and not doing their study work, SWD should be made aware of the services the library offers	1
In order to provide efficient services for SWD, lecturers and staff members should have an understanding of what disability is, what a disabled person goes through	1
UNAM should provide us with transport, especially from the taxi rank because it is far	1
Extend the size of the room (Disability Unit on main campus)	1
No suggestions	2

Discussion

Access to information is very important, especially at the tertiary level, in order for students to fulfill their work. The study found that students with vision impairment don not have enough material to support their academic work. This includes braille and audio materials. Some of the students have to depend on their friends/colleagues to assist them to read books or borrow materials from the library.
A number of challenges were indicated by respondents such as the lack of elevators to access the library, and computer illiteracy among students with disabilities. Additionally, the lack of a ramp to access the library is a thorn in the flesh as students using wheel chairs struggle to access the library because of the stairs, as some respondents commented the "*UNAM library is not user friendly, climbing stairs is exhausting and elevators don't work*"

Important information is mostly on the UNAM portal, which includes timetables; class notes; academic reports and notices. Unfortunately, vision impaired students face problems in accessing this information because there is no software, which can read for them. In addition, a number of students with disabilities are not computer literate or have problems with passwords as indicated by one student who mentioned a '*problem with password which is reset without informing me'*.

The respondents have to depend on the Disability Unit to transcribe guidebooks and notes to the right format. The Disability Unit has a limited number of staff members and lacks equipment, which can cause delays in service delivery. As it was recommended, '*The staff component at the disability unit should be seriously revisited and should be well resourced'*.

In addition, some lecturers put their notes in power point format and refuse to assist the students with the soft copies and others use the UNAM portal and Facebook groups. A study by Seyama et al (2014) had similar findings where lecture notes were presented on PowerPoint, which JAWS software cannot read.

Namibia has a legal framework in place, which promotes and protects the rights of people with disabilities including access to information and services. For example, Namibia is party to the United Nations Convention on People with Disabilities, which aims at promoting and protecting the rights of people with disabilities. It is also a party to the African Charter on Human and People's Rights, which provides that the disabled shall be entitled to special measures of protection. Furthermore, Article 10 of the Namibian Constitution promotes equality and non-discrimination.

Students living with a disability have the right to information in order to access quality education like abled students. Schur et al (2013) noted that quality education is important to enable people to get better jobs, higher income and engage in political participation which leads to national development.

Access to services was found to be a problematic issue due to the following: unfriendly buildings; too many stairs or lack of elevators; insensitive lecturers; and lack of appropriate devices. For example, some respondents stated:

- *Due to inaccessible lecture venues at Block X and Y, I study]by] myself but failed academically'.*
- *Some lecturers are rude when asked for a soft copy, they refuse'.*
- *Sometimes, people park their cars and block the pathways for students with disabilities such as the entrance to classrooms or the study centre becomes a problem.*

Some lecturers who took part in the survey indicated that lecturers need to be informed about students with disabilities and taught how to deal with students with these students.

Recommendations

Below are some of the recommendations:

- When UNAM is building, the university should consider students with different disabilities.
- UNAM should provide transport for students with disabilities to move around campus because not everybody can afford a wheel chair.
- One lecturer recommended that students with disabilities need counselling and life skills in relation to their impairments

Olivier's Social Model of disability (1996 & 2004) assumes that disability is a condition that is created socially. Features of the social environment, people's negative attitude and an un-supportive physical environment cause the barriers of access for people with disabilities. Furthermore, the UN Convention on

People with Disabilities requires member states to develop an inclusive education system at all levels by providing reasonable accommodation of the individual's requirements to ensure that persons with disabilities are provided with effective individualized support measures to maximize their academic and social development.

Conclusion

Improving access to information and services for students with disabilities is a moral obligation of the university in order to ensure quality and inclusive education in Namibia, which leads to achievement of national development goals.

Provision of relevant materials, specialized services, and friendly buildings for students with disabilities is a fundamental human right. UNAM has worked hard to provide some facilities for students with special requirements but more needs to be done to achieve quality and inclusive education in Namibia.

References

African Commission on Human and Peoples Rights, *African Charter on Human and Peoples' Rights*. Available at http://www.achpr.org/instruments/achpr/

Fichten, Catherine; Asuncion, Jennison; Barile, Maria; Fossey, Myrtis; and De Simone, Christina (2000) Access to Educational and Instructional Computer Technologies for Post-Secondary Students with Disabilities: lessons from three empirical studies. In *Journal of Educational Media* Vol.25 (3) p.179-201

Majinge, Rebecca and Stilwell, Christine (2015) I don't want to be carried like Luggage: disability and physical access to Tanzanian academic libraries. *Mousaion* Vol 33 (1) p80-102

Ministry of Education, Namibia (2013) *Ministry of Education Strategic Plan 2012-2017*. Windhoek: Ministry of Education

Ministry of Education, Namibia (2013) *Sector Policy on Inclusive Education*. Windhoek: Ministry of Education

Ministry of Information and Broadcasting, Namibia (1990) *Constitution of the Republic of Namibia*. Windhoek: Ministry of Information and Broadcasting

Nakuta, John (2013). *Baseline Study Report on Human Rights in Namibia.* Windhoek: Ombudsman Namibia.

Namibia Statistics Agent (2016) *Namibia 2011 Census Disability Report*. Windhoek: NSA

Nanyani (2014) Heightened HIV risk for People with Disabilities. *The Namibian* 2014 September 04. p.6

Oliver, M (1996) *Understanding Disability from Theory to Practice*. London: Macmillan

Oliver, M (2004) "The Social Model in Action: if I had a hammer". In *Implementing the Social Model of Disability: theory and research*. Edited by C Barnes & G.Mercer. Leeds: Disability Press. p2-31

Schur, Lisa; Kruse, Douglas and Blanck Peter (2013) *People with Disabilities: sidelines or mainstreamed?* Cambridge: Cambridge University Press.

Seyama, Lungile; Morris Craig and Stilwell, Christine (2014) Information Seeking Behaviour of Blind and Visually Impaired Students: a case study of the University of Kwazulu-Natal, Pietermaritzburg Campus. *Mousaion* 32 (1) p 1-22

Stodden Robert, Whelley Teresa, Chang Chuan and Harding Tom (2001) Status of Educational Support Provision to Students with Disabilities in Postsecondary Education. *Journal of Vocational Rehabilitation* 16 pp189-198

University of Namibia (2016) *Strategic Plan 2016-2020*. Windhoek: UNAM

United Nations Human Rights, Office of the High Commission (2014) "Convention on the rights of Persons with Disabilities". In *The Core International Human Rights Treaties*. New York: United Nations

United Nations Human Rights, Office of the High Commission (2014) "Universal Declaration of Human Rights". In *The Core International Human Rights Treaties*. New York: United Nations

ACCESS TO INFORMATION & SERVICES BY STUDENTS WITH DISABILITIES: A CASE STUDY OF THE UNIVERSITY OF NAMIBIA

Chiku Mnubi-Mchombu
Coordinator/Senior Documentalist
Human Rights and Documentation Centre
University of Namibia

and
Ms. Ivone Tjilale
Administrator
Human Rights and Documentation Centre
University of Namibia

Abstract

In 2006, the United Nations adopted the International Convention on the Rights of Persons with Disabilities (ICRPD) to guarantee the promotion, respect and enjoyment of the rights of people with disabilities. In the same vein, the Namibian Government signed and ratified ICRPD on 4 December 2007 in terms of Article 144 of the Namibian Constitution, it is part of Namibian law and, therefore, it is binding. Furthermore, at national level, Article 10 of the Namibian Constitution states that everyone is equal before the law and no persons may be discriminated against in terms of the groups set out in Article 10(2). The main purpose of this study was to find out to what extent students with disabilities have access to information and other services as well as identifying barriers these students face at the University of Namibia (UNAM). The study used a methodological triangulation, which consisted of questionnaires, and semi structured interviews. The total sampled population comprised of 32 students with disabilities, 14 academics and 5 service providers.

The findings show there is awareness of the needs of student with disabilities at UNAM but facilities are inadequate. There is also a gap between the format of information provided to students and the information seeking behaviors. The study provides recommendations to UNAM on how to improve access to services and information for students with disabilities.

Keywords: *Access to Information; Inclusive Services; Disabilities; Higher Education Institution*

INCLUSIVE ACADEMIC LIBRARIES IN THE 21ST CENTURY: A COMPARATIVE STUDY OF MZUZU UNIVERSITY LIBRARY AND ST. JOHN OF GOD COLLEGE OF HEALTH SCIENCES LIBRARY IN MZUZU, MALAWI

Lizzie Malemia
Periodicals Librarian
Learning Resources Centre
Mzuzu University Library

Hamis Abdullah
Senior Library Assistant
Reference and information services
Mzuzu University

Gift Dube
Children's and Outreach Services Librarian
Department of Library and Information Science
Mzuzu University

and
Maloto Chaura
Librarian
Malawiana and Special Collections/Electronic Resources
Mzuzu University Library

Abstract

Provision of library services to all users without discrimination is crucial to libraries in this century. Inclusive academic libraries provide services to all users regardless users' disabilities. They enhance access and increase meeting the needs of all library users. The purpose of this study was to determine how inclusive are library services to the physically challenged students at Mzuzu University Library and St. John of God College of Health Sciences Library and how are these services similar or different. A structured questionnaire was used to collect data from library staff and students at Mzuzu University and St. John of God College of Health Sciences and semi-structured interview questions were used to collect data from Librarians in both institutions. Observation checklist was also used to identify the physical infrastructures, media formats, and services provided in both institutions. The findings revealed that visual impairment was the major physical challenge amongst students in both institutions. Although physical infrastructures like ramps were available in both institutions, there is no policy that guides provision of library services to physically challenged students in both institutions. The study therefore concludes that inclusive library services provided to physically challenged *students are limited in both institutions due to lack of policies. The study, therefore, recommends that both institutions need to take proactive measures in development of policies that can guide the provision of library services to physically challenged students.*

Keywords: *inclusive library services, physically challenged students, academic libraries*

Introduction

Information is crucial to all people and provision of library services to all users without discrimination is one of the main agenda of libraries in this century. Inclusive libraries provide services to all people including pensioners, the un employed, the hospitalized, prisoners and the physically challenged (Forrest, 2006). This paper focuses on inclusiveness of academic library services to physically challenged students. The term "physically challenged" refers to anyone who has a problem with their body that makes it difficult for them to do things that other people can do easily (Longman Dictionary, 2017). In other words, the term is a euphemism for "disabled". Physically challenged people include people with physical or mobility impairment, visual impairment, hearing impairment, dyslexia, medical conditions and mental health difficulties (Forest, 2006 p.14). Inclusive academic libraries provide services that enhance access, increase meeting the needs of all library users and improve use of information for their academic tasks. One of the target goals under Sustainable Development Goals (SDGs) is to "build and upgrade education facilities that are child, disability and gender sensitive, and provide safe, nonviolent, inclusive and effective learning environments for all (United Nations, 2015). According to American Library Association (ALA) code of ethics, one of the ethical principles that guide the work of librarians is to provide "the highest level of service to all library users through appropriate and usefully organized resources; equitable service policies; equitable access; and accurate, unbiased, and courteous response to all requests". In addition, ALA bill of rights states that "a person's right to use a library should not be denied or abridged because of origin, age, background, or views" (ALA,1939). In response to this, libraries have been tasked to provide inclusive library services in order to accommodate all library users. This calls for libraries to ensure that physical structures, resources and services meet the needs of all users regardless of one's condition and ability (Majinge and Stilwell, 2013). Library users who are physically challenged require special, convenient access to library services as compared to library users who are able-bodied. Libraries Serving Disadvantaged Persons (LSDP), a section of the International Federation Library Association (IFLA), championed the promotion of the development and adoption of standards and guidelines that ensure equal access to library services to all groups of people on society who are unable to make use of conventional services (Forrest, 2006 p.13). These groups include people who have a disability. Irvall and Nielsen (2005) prepared an accessibility checklist which was published by IFLA. The aim of the checklist was to support libraries in making their services more accessible to patrons with disabilities. The checklist involves three main sections which are the physical access, media formats and service and communication. Similarly, guidelines for best practices have been provided through United Kingdom government legislation on the Special Educational Needs (Disability Discrimination Act, 2005) and the Society of College, National and University Libraries (SCONUL) (2007). All these have been formulated to promote and enhance equity and inclusiveness in library service provision in academic libraries all over the world. However, diverse users' characteristics have caused some challenges on how academic libraries can serve all its users without discrimination.

Inclusive library services in Malawi

The constitution of the Republic of Malawi states that discrimination of a person in any form is prohibited and all persons under any law guaranteed equal and effective protection against discrimination on ground of race, colour, sex, language, religion, political or other opinion, nationality, ethnic or social origin, disability, property, birth or other status (Malawi Government, 1994). In an attempt to respond to disability related inequalities in education, Malawi adopted a policy of inclusion and education for all. As a result there is increased access to mainstream schools for pupils with disabilities. According to Ministry of Education, Science and Technology (MoEST), the number of students with special learning needs at primary school level was 93,664, secondary school level was 2,911 and 61 at tertiary level (MoEST, 2013 p. 113). Despite provisions in education policy on inclusive services in education sector, physically challenged students face different challenges when accessing information in academic libraries. Most of the time libraries do not plan and provide services that serve the physically challenged students (Chaputula and Mapulanga, 2016).

Contextual setting

Mzuzu University is the second national university after University of Malawi. It was enacted by the Parliament of Malawi in May 1997 and was officially opened in 1999. This idea was conceived by Government in 1994 so as to increase access to higher education and contribute to the nation's future through education, training and research. Since its first intake in 1999, the university has steadily grown from a single faculty to six more faculties and three centres. Its mission is "to provide high quality education, training, research and complimentary services to meet the technological, social and economic needs of individuals and communities in Malawi and the world" (Mzuzu University, 2017). Mzuzu University Library provides different services to students and has several sections. These include electronic resources, books, print journals, videos, CDs, and internet services. As of 2017, Mzuzu University Library serves about 4,067 students, which includes generic and open and distance learners; these are undergraduates and postgraduates learners.

Northern Region of Malawi. It was established in 2003. It mission is "to be a centre of excellence in education, training and research for the enhancement of quality of mental health services in Malawi and the sub region" (St. John of God Hospitaller Services, 2017). St. John of God College of Health Sciences Library provides internet services, books, print journals, videos, and CDs to students. As of 2017, the student population was 280 and these are undergraduate learners.

Statement of the problem

Academic libraries in Malawi have been responsive to government and international library associations' policies of providing inclusive library services to its patrons. Mash (2010) states that libraries have always been in a state of change to accommodate diverse needs of users. Mzuzu university library has made strides in the provision of inclusive library services which include collection development and provision of physical structures for easy access and use. However, the University encounters some challenges in the process. St. John of God Library has also made some strides in the provision of inclusive library services to physically challenged students as required by the National Council for Higher Education (NCHE). This study, therefore, intends to determine how inclusive library services are to the physically challenged students at Mzuzu University and St. John of God College of Health Sciences libraries and how are these services similar or different.

Specific Research Objectives

The specific research objectives of the study were as follows:

- To identify types of physically challenged students that Mzuzu University and St. John of God College of Health Sciences libraries serve.
- To identify strategies that Mzuzu University and St. John of God College of Health Sciences libraries use when assisting physically challenged students.
- To determine challenges that Mzuzu University and St. John of God College of Health Sciences libraries face when serving physically challenged students.
- To determine differences and similarities on how Mzuzu University and St. John of God College of Health Sciences libraries help physically challenged students to access library services.

Literature Review

Several studies have been conducted to understand the library services provided to physically challenged students. Findings have shown that there are many people who are physically challenged like those in wheelchairs, hearing impairment, and visual impairment who seek information services from libraries (Chiparausha and Mavhunduse, 2014; Haumba and Kamusiime 2014; Musoke, 2014). A study conducted by Ekwelem (2013) at Nnandi Azikiwe University Library in Nigeria with the aim of exploring the use of electronic resources by physically challenged library users, identified 194 physically challenged students whose composition was 101 visually impaired and 93 mobility challenged.

According to Haumba and Kamusiime (2014), the high income countries have managed to make accessible their education establishments to the physically challenged or disabled students. However, this is in contrast with the low income countries where the physically challenged continue to experience barriers to access education establishments. For instance, Phiri (2014) states that physically challenged users in developing countries face challenges such as unfriendly academic library buildings that are inaccessible due to lack of lifts to carry them to upper floors to access information services. Chiparausha and Mavhunduse (2014) in their findings of a survey research study conducted at University of Zimbabwe reported that the University Library faced challenges such as lack of appropriate infrastructure which could support physically challenged people to access library facilities, obsolete information and communication technology appliances and lack of trained staff to assist the users. Bodaghi and Zainab (2013) conducted a study in Public and University Libraries in Zanjan in Iran where findings revealed that 53.8% of the libraries did not provide ramps while 63% had no parking space for the disabled. Similarly, a study by Ekwelem (2013) from Nnandi Azikiwe University Library in Nigeria indicates that only visually impaired resources were taped books and online public access catalogue while the mobility challenged had no resources available for their use. In Malawi, a study conducted by Chaputula and Mapulanga (2016) shows that there is lack of library services for physically challenged students, lack of equipment to support the physically challenged to access the library and information resources, and that librarians do not provide specialized training and market their services to physically challenged people. While Phukubje and Ngoepe (2017) in their study at Limpopo University in South Africa found that students with physical challenges were not satisfied with library services provided due to inability to access certain information not being available in appropriate formats. In addition, Chaputula and Mapulanga (2016) indicated that libraries failure to procure materials in other formats contribute to failure of provision of information resources to physically challenged people.

Scholars have provided recommendation for libraries to follow in order to provide inclusive library services. Irvall and Nielsen (2005) has recommended checklist which include clear signposting and guiding, entrances which are wide enough to allow a wheel chair to pass through, automatic doors, toilets that are friendly to people with physically challenged, book shelves reachable by wheelchair users, reading computer tables of varying heights to suit all, staff trained to assist physically challenged library users. In addition, Phiri (2014) adds that for a library to be inclusive, information materials such as Braille, large print books, special software to enable people with visual impairment to type with ordinary letters of the alphabet and escalators in buildings with higher floors has to be available. Haumba and Kamusiime (2014) have recommended implementation and enforcement of laws and policies that can help in achieving real change in the provision inclusive services to the physically challenged. In a study conducted by Chiparausha and Mavhunduse (2014) revealed existence of different policies that guided provision of information services to physically challenged people at the University of Zimbabwe. The study revealed that only six libraries out of nine had policies on library services to the physically challenged users.

Methodology

The study adopted a mixed methods approach, thus mixing both qualitative and quantitative research approaches (Creswell, 2014). In order to achieve the aim and objectives of the study, the researchers employed a survey research design. Connaway (2010) stipulates that survey research design collects data from all or part of a population to access the relative incidence, distribution and interrelations of naturally occurring variables. Survey research is useful in determining the present status of given phenomenon and in this case to identify the type of physically challenged students the libraries serve. The population of the study included the library staff members who serve the students in the service counters, Librarians, and students who frequently used the library. In this study, a structured questionnaire was administered to library staff and students in order to collect quantitative data. In order to get more clarifications in the provision of inclusive library services, follow-up interviews were conducted with the Librarians in order to collect qualitative data. Semi-structured interviews were used to gather such narrative data. These interviews gave an opportunity to probe or allowing new questions to be brought up during the interviews as a result of what the interviewee said. In order to get more insight, observation checklist of the physical infrastructure, media formats and services was done in both institutions in order to identify the inclusive library services provided to physically challenged students.

The study used non-probability purposive sampling to select 12 library staff members at Mzuzu University Library and a total of 3 library staff members were from St. of God College of Health Sciences Library. Convenience sampling was used to identify 135 students who frequently used the library at Mzuzu University and 40 students were identified at St. John of God College of Health Sciences library including students with visible physical challenges. The quantitative data collected from the respondents was analysed using Microsoft Office Excel and the qualitative data was analysed thematically.

Presentation of data and Discussion

A total of 135 questionnaires were administered to students at Mzuzu University library and out of these 77 were returned representing a response rate of 57%. A total of 40 questionnaires were administered to students at St John of God College of Health Sciences library and out of these 30 were returned giving a response rate of 75% as shown in Table 1 below. A total of 12 questionnaires were administered to all library staff who serves students at the service counters at Mzuzu University library and out of these 12 were filled and returned representing 100% response rate. Three (3) questionnaires were administered to St. John of God College of Health Sciences library staff who serves students at the service counters and out of these 3 were returned representing 100% response rate as shown in Table 2 below.

Table 2: Breakdown of library staff respondents

University/College	Number of Expected Respondents	Number of Actual Respondents	Percentage (%)
Mzuzu University	135	77	57%
St. John of God College of Health Sciences	40	30	75%
Total	175	107	61%

Table 1: Breakdown of student respondents

University/College	Number of Expected Respondents	Number of Actual Respondents	Percentage (%)
Mzuzu University	12	12	100%
St. John of God College of Health Sciences	3	3	100%
Total	15	15	100%

Physically challenged students at Mzuzu University and St. John of God College of Health Sciences

Students were asked to indicate the type of physical challenge they have. The purpose of this question was to identify what type of physically challenged students does Mzuzu University and St. John of God College of Health Sciences have. Results presented in Figure 1 below shows distribution of the type of physically challenged students at Mzuzu University and Figure 2 below shows distribution of the type of physically challenged students at St. John of God College of Health Sciences. The majority of the students with physical challenges 13 (17%) of the total respondents at Mzuzu University indicated that they were visually impaired, and 8 (10%) students were of short height. The majority of students with physical challenges 7 (23%) of the total respondents at St. John of God College of Health Sciences indicated that they were visually impaired, 6 (20%) students were left handed. The respondents who selected 'other' 56 (73%) and 9 (30%) of the total respondents, were the students who did not have any physical challenges from Mzuzu University and St. John of God College of Health Sciences respectively. It was interesting to note that visual impairment was the highest impairment in both institutions and some students had multiple physical challenges. This finding concurs with Ekwelem (2013) who found out that out of 194 identified physically challenged students at Nnandi Azikiwe University library, the majority 101 were visually impaired. From these figures in the study findings, it can also be suggested that not many students living with physical challenges do make it to higher education institutions in Malawi.

Figure 1: Type of physically challenged students at Mzuzu University N=77

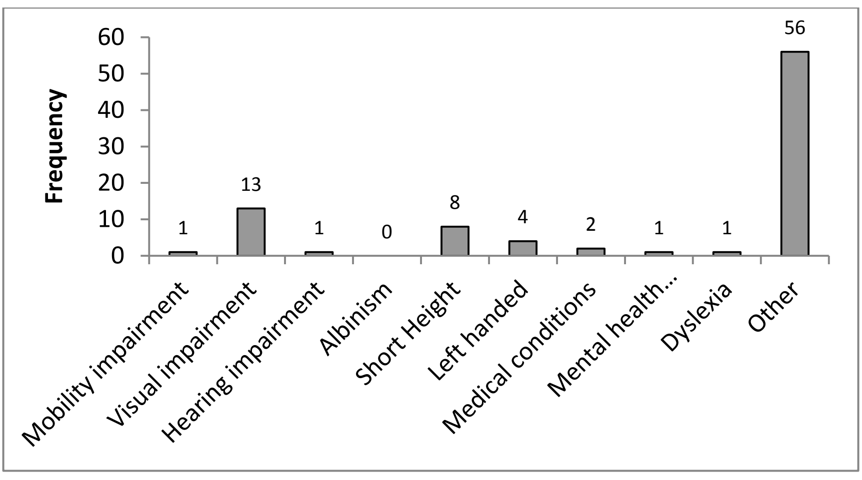
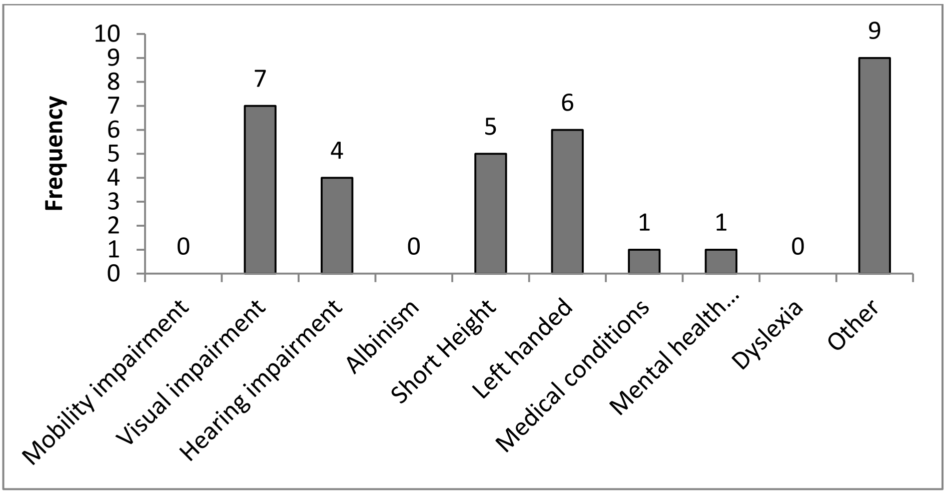


Figure 2: Type of physically challenged students at St. John of God College of Health Sciences N=30



Additionally, the study sought views from library staff to indicate the type of physically challenged students that they do serve in the library. In response, out of 12 library staff, 11 (92%) library staff at Mzuzu University indicated mobility impairments. This could probably be attributed to the physical appearance of the mobility challenged students while library staff at St. John of God College of Health Sciences indicated negative response on mobility impairment. This could be due to the non-availability of the mobility challenged students at the institution. These results also point to another interesting fact that maybe Mzuzu University is more inclusive than St. John of God College in enrolling students with physical challenges.

Strategies used in assisting physically challenged students

Physical infrastructures, information resources and equipment's being provided by any institution are some of the very important factors which do facilitate inclusiveness in a library. On this, the students were asked to indicate the physical infrastructures, media formats and equipment's available at the institutions that assist the physically challenged students when they are using the library. The question allowed multiple responses. Majority of students 53 (69%) indicated ramps, 41 (53%) enough lighting, and 40 (52%) tables with good height at Mzuzu University library as shown in Figure 3 below. Furthermore, at St. John of God College of Health Sciences library, the majority of students 21 (70%) indicated tables with good height, 21 (70%) enough lighting, and 20 (67%) chairs with good height as shown in Figure 4 below. Negative responses were indicated at both institutions of Mzuzu University and St. John of God College of Health Sciences libraries on availability of toilets accommodating physically challenged students, automatic doors, and Braille materials. Major finding to note was that both institutions do not have toilets that accommodate physically challenged students. This is worrisome indeed in a country which has a population of 4.18% of its people living with physical challenges and may as well mean that most institutions of higher learning in Malawi are not ready to accept students living with physical challenges (Munthali, 2011).

Figure 3: Physical infrastructures, media formats and equipment's at Mzuzu University N=77

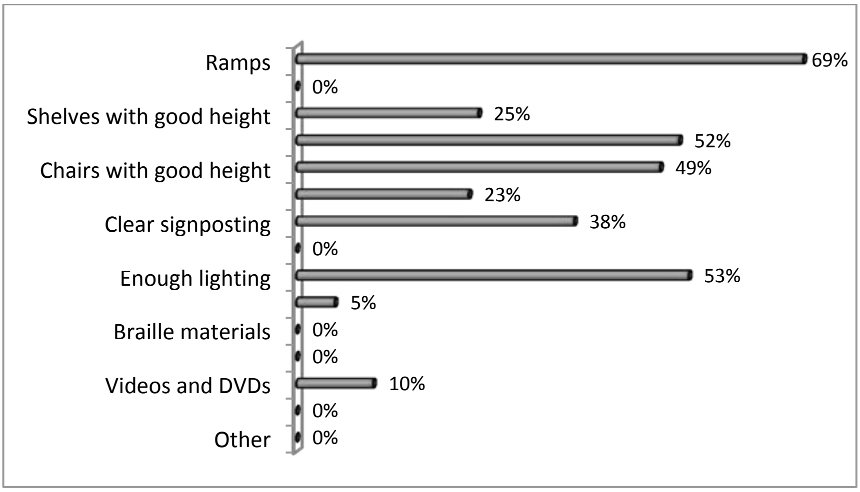
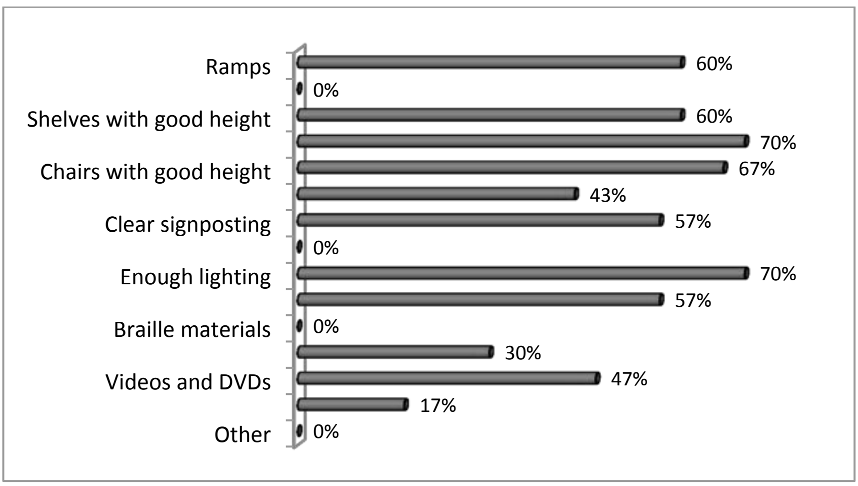
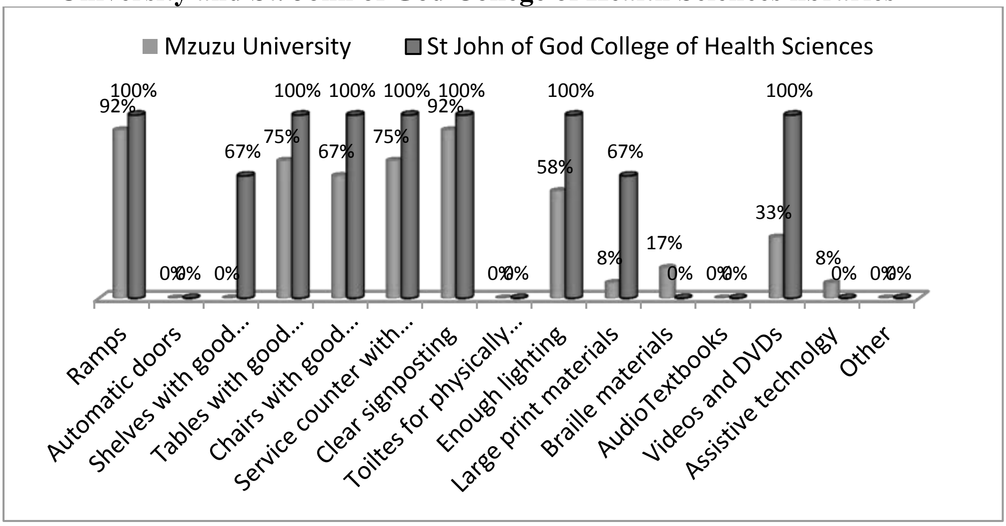


Figure 4: Physical infrastructures, media formats and equipment's at St. John of God College of Health Sciences N=30



The same question on physical infrastructures was also posed to library staff to find out the physical infrastructures, media formats and equipment's that were available at Mzuzu University and St. John of God College of Health Sciences libraries. Figure 5 below show negative responses from library staff on availability of automatic doors, shelves with good height, toilets accommodating physically challenged, Braille materials, audio textbooks and assistive technology.

Figure 5: Breakdown of responses by library staff on physical infrastructures, media formats and equipment's available at Mzuzu University and St. John of God College of Health Sciences libraries



It is evident from the above findings that, although both institutions provide physical infrastructures to physically challenged students, the services are limited. This finding concurs with Phukubje and Ngoepe (2017) who observed that, at Limpopo University, students with physical challenges were not satisfied with library services due to non-availability of information in appropriate formats. And again this questions both institutions on how ready they are to accept physically challenged students in their institutions who quests for higher learning.

Availability of policies used

Librarians from both institutions were asked in an interview whether the libraries had policies that guide them to provide inclusive library services to physically challenged students. The findings indicated negative responses from both institutions as they indicated that there were no policies in place although one librarian indicated that they use personal initiative and experience to support physically challenged students.

The researchers further asked the Librarians whether the institutions had any policies that guide the institutions in terms of supporting physically challenged students. The responses were negative from both institutions. The finding differs with a study conducted by Chiparausha and Mavhunduse (2014) at the University of Zimbabwe who indicated that there was existence of different policies that guided provision of information services to physically challenged people at six out of nine libraries. It is evident from these findings that deliberate measures are needed to be urgently undertaken in these institutions to accommodate physically challenged students if they are to benefit from library services being provided in both institutions.

Challenges students with physical challenges face in using the library

Librarians from both institutions were asked in an interview to indicate whether they face challenges in assisting physically challenged students. One librarian indicated that:

“Materials are not suitable for visually impaired, the use of stairs to go to computer laboratory impede mobility challenged students, and lack of money to procure necessary equipment”

Another librarian indicated that:

“The library does not have materials that are in different formats”

In addition, the same question was also asked to students to indicate challenges that they face when using the library services. The question allowed multiple responses. The majority of students 54 (70%) and 22 (73%) of the total respondents from Mzuzu University and St. John of God College of Health Sciences libraries respectively indicated lack of toilets that could accommodate physically challenged students was the major challenge. A further analysis of the results show that 44 (57%) indicated lack of equipment and 37 (48%) indicated lack of assistive technology at Mzuzu University library while 16 (53%) indicated most materials were in printed form at St. John of God College of Health Sciences as shown in Figure 5 and Figure 6 respectively below.

Figure 6: Challenges students with physical challenges face in using the library at Mzuzu University N=77

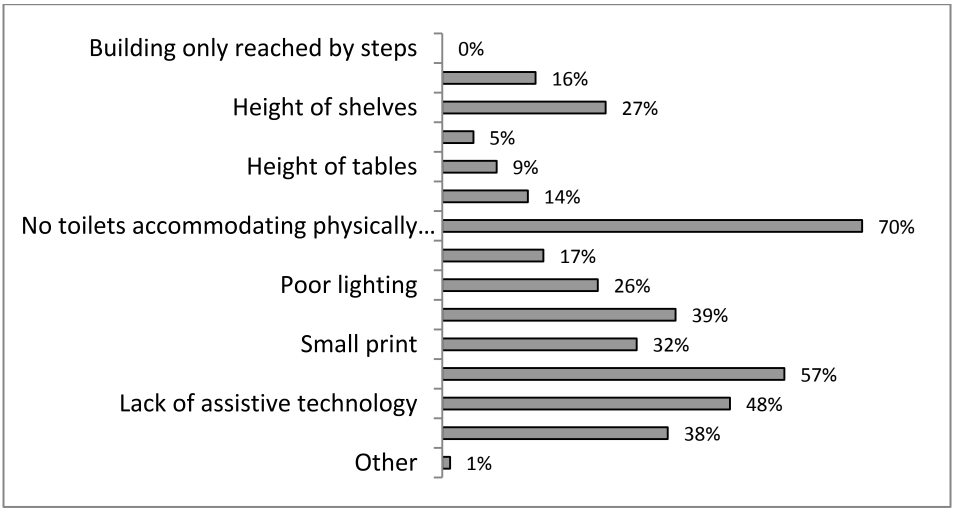
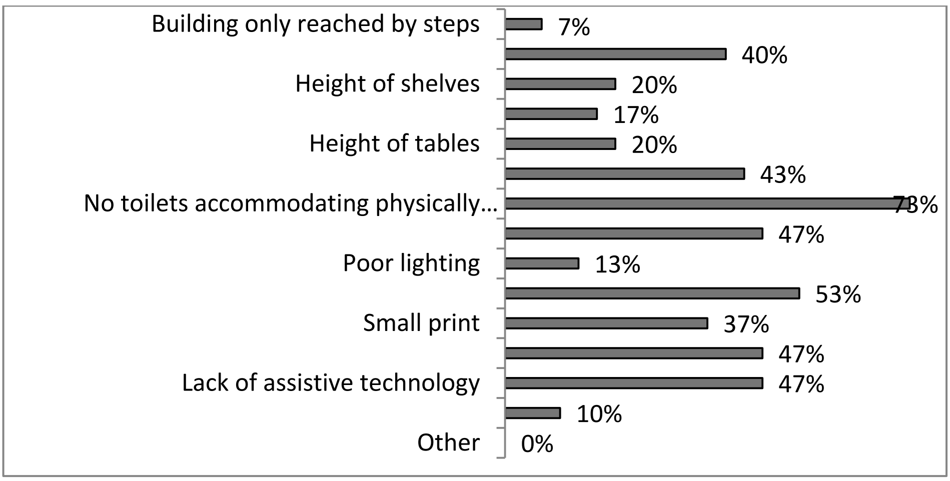


Figure 7: Challenges students with physical challenges face in using the library at St. John of God College of Health Sciences N=30



This finding concurs with Chaputula and Mapulanga (2016) who indicated that one of the challenges of libraries in providing services to physically challenged people was failure by libraries to procure materials for physically challenged students. This could be due to low budgets which are provided to institutions from government and lack of policies to guide inclusive services in the institutions. In addition, this finding concurs with that of Phiri (2014) who argues that for a library to be inclusive, information materials such as Braille, large print books, special software to enable people with visual impairment to type with ordinary letters of the alphabet, and escalators in buildings with higher floors has to be available. From this finding it is clear that students with physical challenges are being marginalized unknowingly by libraries of these two institutions.

Conclusion and recommendations

It is clear from the above findings that physically challenged students are indeed available in the two institutions of higher learning with the majority being the visually impaired students. Although the two libraries provide physical infrastructures like ramps, enough lighting and tables with good height, several challenges have been noted which are impeding inclusive library services. These include lack of toilets that physically challenged students can use when using the library, lack of materials in different formats and equipment's that can assist attain their goal when they are using the library without problems, and lack of policies that guides provision of library services. It can be concluded that the services that the two libraries are providing have not taken care of the physically challenged users who will one day find themselves studying at these institutions, and inclusive library services provided to physically challenged students in both institutions are limited due to lack of policies. It can also be concluded that proactive measures are needed if physically challenged students are to benefit from library services provided in both institutions. The synthesis of the findings has led us to make the following recommendations which we believe if implemented by Mzuzu University and St. John of God College of Health Sciences libraries, can help alleviate the challenges physically challenged students face when using the two libraries:

- Provision of materials in different formats like Braille, large print materials and audio textbooks so that the visually and hearing impaired can use whenever they are using the library.
- Provision of toilets that can accommodate physically challenged students especially the mobility impaired.
- Provision of shelves, tables and chairs of good height especially for the mobility impaired and those with short height.
- Development of policies that will guide the provision of library services to physically challenged students.
- Allocate enough money in the budgets for the procurement of equipment's and resources for the physically challenged students.

References

American Library Association (1939) 'ALA code of ethics and bill of rights' Available: http://files.rvcog.org/ftp//0_JCLD/District%20Policies/ALA_Code_of_Ethics_and_Library_Bill_of_Rights_Approved.pdf [accessed 27 July 2017]

Bodaghi, N.B. & Zainab, N.A. (2013) 'Examining the accessibility and facility for the disabled in public and university library buildings in Iran' *Information Development.* 29 (3) pp. 1-10.

Chaputula, A.H & Mapulanga, P. M. (2016) 'Provision of library services to people with disabilities in Malawi' *South African Journal of Library and Information Science*. 82 (2) pp. 1-10.

Chiparausha, B. & Mavhunduse F. (2014). Re-positioning library and information services to cater for patrons with special needs: the Zimbabwe University Libraries perspective. In G. Chipeta, L. Malala, P. Mapulanga, A.W.C. Msiska, G. Salanje (Eds.). *Proceedings of XXI Standing Conference of Eastern, Central and Southern Africa Library and Information Associations (SCECSAL XXI).* Paper presented at the Standing Conference of Eastern, Central and Southern Africa Library and Information Association Lilongwe, Malawi, 28 July – 01 August 2012(pp. 173-178).

Connaway, L.S. & Powell R.R. (2010) *Basic research methods for librarians.* 5th ed. California: Libraries unlimited.

Creswell J.W. (2014) *Research Design: Qualitative and Quantitative and Mixed Methods Approaches*. 4th ed. Los Angeles: Sage.

Ekwelem, V.O. (2013) 'Library services to disabled students in the digital era: challenges for outcome assessment' *Library Philosophy and Practice,* Paper 970 (online) http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2352&context=libphilprac [accessed 27 July 2017]

Forest, M. (2006) 'Towards an accessible academic library: using IFLA checklist' *IFLA Journal.* 32 (1) pp. 13-18.

Haumba, E.N. & Kamusiime, N. (2014). Promoting effective friendly information and service delivery to persons with disabilities in Uganda. In G. Chipeta, L. Malala, P. Mapulanga, A.W.C. Msiska, G. Salanje (Eds.). *Proceedings of 21stStanding Conference of Eastern, Central and Southern Africa Library and Information Associations (SCECSAL XXI)*. Paper presented at the Standing Conference of Eastern, Central and Southern Africa Library and

Information Association, Lilongwe, Malawi, 28th – 01 August 2012 (pp. 179 - 187).

Irvall B. & Nielsen G.S. (2005) *Access to libraries for persons with disabilities: checklist International Federation of Library Association and Institutions, IFLA Report No 89.* The Hague: IFLA. Available: http://www.iflaorg/files/assets/hq/publications/professional-report/89.pdf [accessed 27 July 2017]

Longman Dictionary of Contemporary English. Available: http://www.ldoceonline.com/ dictionary/physically-challenged [accessed 27 July 2017]

Majinge, R.M. & Stitwell, C. (2013) 'Library services provision for people with visual impairments and in wheelchairs in academic libraries in Tanzania' *South African Journal of Libraries and Information Science.* 79 (2) pp. 39-50.

Mash, D (2010) *'Decision Making in the Absence of Certainty: A study in the context of Technology and the Construction of the 21st Century Library'*. Chicago: Association of College and Research Libraries.

Ministry of Education, Science and Technology (2013) *Education sector Implementation Plan II (2013/14-2017/18): Towards Quality Education Empowering the School*. Lilongwe: Government of Malawi.

Munthali, A.C. (2011) *A situational analysis of persons with disabilities in Malawi*. Zomba; Centre for Social Research: University of Malawi, Zomba, Malawi.

Musoke, G.N. (2014). University Library infrastructure for persons with special needs: the Makerere University Library experience. In G. Chipeta, L. Malala, P. Mapulanga, A.W.C. Msiska, G. Salanje (Eds.). *Proceedings of XXI Standing Conference of Eastern, Central and Southern Africa Library and Information Associations (SCECSAL XXI).* Paper presented at the Standing Conference of Eastern, Central and Southern Africa Library and Information Associations, Lilongwe, Malawi, 28 July -01 August 2012 (pp. 189 -196).

Mzuzu University (2017) *Mzuzu University Mission Statement*. Available: www.mzuni.ac.mw

Phiri, D.B.V. (2014) Knowledge and information for persons with special needs: the case of the University of Malawi, Chancellor College. In G. Chipeta, L. Malala, P. Mapulanga, A.W.C. Msiska, G. Salanje (Eds.). *Proceedings of XXI Standing Conference of Eastern, Central and Southern Africa Library and Information Associations (SCECSAL XXI).* Paper presented at the Standing

Conference of Eastern, Central and Southern Africa Library and Information Association, Lilongwe, Malawi, 28 July -01 August 2012 (pp.197 - 199).

Phukubje and Ngoepe (2017) 'Convenience and accessibility of library services to students with disabilities at the University of Limpopo in South Africa' *Journal of Librarianship and Information Science*. 49 (2) pp. 180-190.
Republic of Malawi (1994) *The Constitution of the Republic of Malawi*. Zomba: Government Printing Press.

St. John of God Hospitaller Services (2017) *St. John of God College of Health Sciences Mission Statement*. Available: http://www.sjog.mw/

United Nations (2015) *Sustainable Development Goal 4*. https://sustainabledevelopment.un.org /sdg4[accessed 27 July 2017]

TRANSFORMING PUBLIC LIBRARIES IN KENYA THROUGH TECHNOLOGY

Juliana Muchai
Principal Resource Mobilization Officer
Kenya National Library Service

Abstract

Availability of information resources through utilization of modern technology and strategic partnerships is a strategic objective for the Kenya National Library service (knls). In 2011, knls in partnership with Communication Authority of Kenya established eresource centres in 10 rural Libraries. In 2015, a further 46 eresource centres were established in 46 public libraries and in 2016, knls in partnership with Worldreader rollout an ereading programme with 3000 ereaders and 600,000 ebooks.

This paper presents a story of how knls through its public Library Network of 62 libraries is adopting technology to serve the community. Kenya National Library Service (knls) Board has adopted a holistic approach where equal attention is given to strengthening physical access to technologies, capacity building of library staff, provision of digital skills to library users and provision of relevant digital content in multiple forms.

Key words: *Public Libraries, Technology, Access, Partnership, digital skills*

Introduction

Digital revolution has increasingly presented a challenge for public Libraries to address the changing Library usage patterns, library users' needs/expectations and increased demand for access to digital collection. The emerging trends in education/learning and ICT sector has introduced new methods and technologies that allow free and open access to information/learning, economical storage of information, new methods of acquisition of essential library materials and new means of knowledge sharing.

Universal access to ICTs has been identified by the Government of Kenya as a major objective of the Vision 2030 efforts It is expected that greater access to ICTs will contribute to economic growth by reducing transaction costs and increasing businesses efficiency, especially in the case of small service firms in rural areas; in addition, ICTs should contribute to improve educational standards and access to information. (Kenya Vision 2030).

A study conducted by the Research department of knls on Stakeholders' Perception on the future of Public Libraries found that providing Internet access, Information materials, library user education and computer /Tablets/ e-readers were among essential programmes and service needed in Public Libraries.

A survey of public perceptions of libraries in Africa commissioned by EIFL in 2010 reported that Computing and technology related resources in libraries are rated lowest on excellence and this was further emphasized by the poor rating of librarians' skills on the same.

Barriers to adoption of technologies in public libraries include lack of ICT infrastructure, digital literacy skills for librarians and library users, access to relevant content and inadequate resources to support ICT based programmes. The Kenya National Library Service has embarked on addressing these challenges so as to meet the demand for ICT related services in the Libraries.

Methodology

The Kenya National Library Service manages 62 libraries in 33 counties in Kenya. Implementation of the ICT based programmes has been achieved through support from the Government and external partnerships. The projects implementation involved three key components:

a) Pilot phase:

This is the testing phase of the initiative and that informs the subsequent rollout of the project across the entire network. A selection of pilot Libraries was done using a set criterion that includes Geographical Location, size of the library and community needs. Successful implementation of the pilot phase led to a rollout of the projects in all Libraries.

Knls in partnership with the Communications Authority of Kenya (CA) established e-resource centres in 56 public libraries at a cost of Kshs. 200 Million. (USD 2m). The main objective of this initiative is to facilitate increased access to information, knowledge and communication services and enhance ICT skills and capacity building among communities for economic and social development.

Establishment of the eresource centres was started in 10 pilot libraries and was officially launched in 2013. In 2015, 46 additional eresource centres were established in 46 Libraries. Each centre is equipped with 10 computers, a printer, a photocopier, Internet connectivity and furniture.

Capacity building for staff was done for them to support library users in accessing information through the centres.

Introduction of ereaders commenced with a pilot phase in 2014 in 3 libraries. This was in partnership with an international non-profit organization Worldreader, that provides access to digital books via e-readers and mobile phones. In 2016, knls received 3000 ereaders with 600000 ebooks. The devices were distributed to 60 libraries. 120 Librarians (2 per Library) were trained on managing and facilitating use of e-readers. Each of the 3000 e-readers is preloaded with 200 books (100 African titles in Kiswahili and English) and has a capacity to hold up to 1500 books. For children, the titles primarily include storybooks and school curriculum books, and for adults, pleasure reading and informational books.

b) Staff training

Capacity building for staff starts at the onset of the project. At least 2 Librarians from the project sites are trained and inducted to the new programme. This ensures project ownership at the branch level and contributes to the successful implementation. Knls through support from partners has continuously built skills and capacity for Librarians through various programmes:

- In 2014-2015, EIFL Public Library Innovation Programme (EIFL-PLIP) - training for 29 librarians to build public librarians' ICT competencies, and skills that support ICT adoption and creation of new library initiatives that are technology driven.
- In 2016 - training for 60 librarians to build their capacity to manage and facilitate access to E-resources. The training has enhanced the ability of public librarians to support their communities in identifying and using relevant free and subscribed on-line resources.
- In 2016-2017, knls and Worldreader – training for 120 Librarians on managing and facilitating use of e-readers.

c) Sustainability

The projects were supported for 2 years by external partners while knls prepared to take over the projects after donors' exit. There is a risk in Libraries failing to sustain the projects since this requires ongoing investment in Hardware and software upgrades, Internet connectivity, Staff training and running ICT based programmes and services in Libraries. The projects sustainability was discussed and agreed upon during project inception. This ensured that knls was prepared to take up the responsibility of sustaining the programmes and services established in the libraries.

Results

E-resources Centres in Public Libraries

Establishment of eresource centers provided an entry point for knls to introduce new ICT based services. In addition, the e-resource centres have become information access points and ICT hubs for the community in rural areas. Statistics indicates that in 4 years over 170,000 library users have received training in basic ICT skills, while over 580,000 students and community members have accessed and used the ICT facilities in the e-resource centers. The centres have also provided opportunities to students who are advancing education through distance/e-learning. The centers have become community access points to important digital platforms including e-government services, e-marketing and e-health.

Mobile Digital devices

The storage of information in digital devices is addressing the challenge of space and books wear and tear. Some mobile devices have a capacity to carry up to 1,500 e-books. In addition, the lifespan of the devices which is approximated at 5 years is much higher as compared to that for popular physical books. Portability of the devices has made it easier for librarians to serve the persons with disabilities especially those that are not able to visit the physical libraries.

Availability of mobile devices has contributed to an increase in Library usage especially for young readers. More than 600,000 digital books from Worldreader's local and international publishing partners are now available to Kenyan communities through the libraries.

Assistive Technologies for Visually Impaired Persons (VIPs)

Technology has enabled Knls libraries to serve diverse clientele including the physically challenged. Nairobi Area Library has acquired a software to convert books into braille and Audio books. The audio books are accessible through the

Audio Navigators. So far, the library has copied 80 textbooks and storybooks into both braille and video formats, which are placed in the special area for blind and visually impaired patrons in the library and access through the mobile library service. The books are accessible to over 500 blind and visually impaired children at schools, homes and social centers. This project has enhanced the level of information access for people living with disabilities.

Digital Literacy training and online learning for Library Users

Technology in libraries is providing access to online learning. Online learning presents an opportunity for students who cannot afford tuition fees to pursue relevant courses free of charge or at a highly subsidized cost. In 2016, Knls, EIFL and Peer 2 Peer University (P2PU) launched a pilot project on blended learning in Libraries through Learning Circles. Learning Circles are lightly-facilitated study groups for learners who wish to take online courses, together. The learners meet in the library once a week for 6-8 weeks, work together through an online course with the support of a librarian. Learning Circles serve to enhance digital skills, increase learner confidence, and create a support group for learning - far more than just the delivery of content that is the focus of most online learning platforms.

The project has adopted the ‘learning circle’ model that was pioneered by Peer 2 Peer University and Chicago Public Library in 2015. The main goal of the project is to build the capacity of Public Libraries as community hubs that support online learning, increase the relevance of libraries in the digital age and provide access to knowledge for library patrons. In one year, 246 learners had enrolled and completed online courses. The project has now been rolled out to 15 Libraries.

Access to online tutorials for children: Mathwhizz Digital Learning in Nakuru Library

KNLS in partnership with EIFL and Bookwaves Digital Learning (Kenya) is promoting access to online learning opportunities to more than 600 primary school children (classes 1 to 8) in Nakuru through Maths-Whizz software, an online virtual Maths tutor that provides highly interactive Maths lessons and quizzes. The project changed children’s attitudes to learning numbers and improved children’s performance in mathematics.

Learn My Way-online learning platform

Since 2017, Knls and Good Things Foundation-UK are in partnership to pilot a project on digital and social inclusion for people through Kenya libraries. Good Things Foundation is a UK Charity working to help socially excluded people improve their lives through digital literacy and has developed a model that enables and supports people to gain basic digital skills through an online learning platform, “Learn My Way”. Learn My Way provides basic digital skills training for people with little or no previous experience of the internet. The curriculum

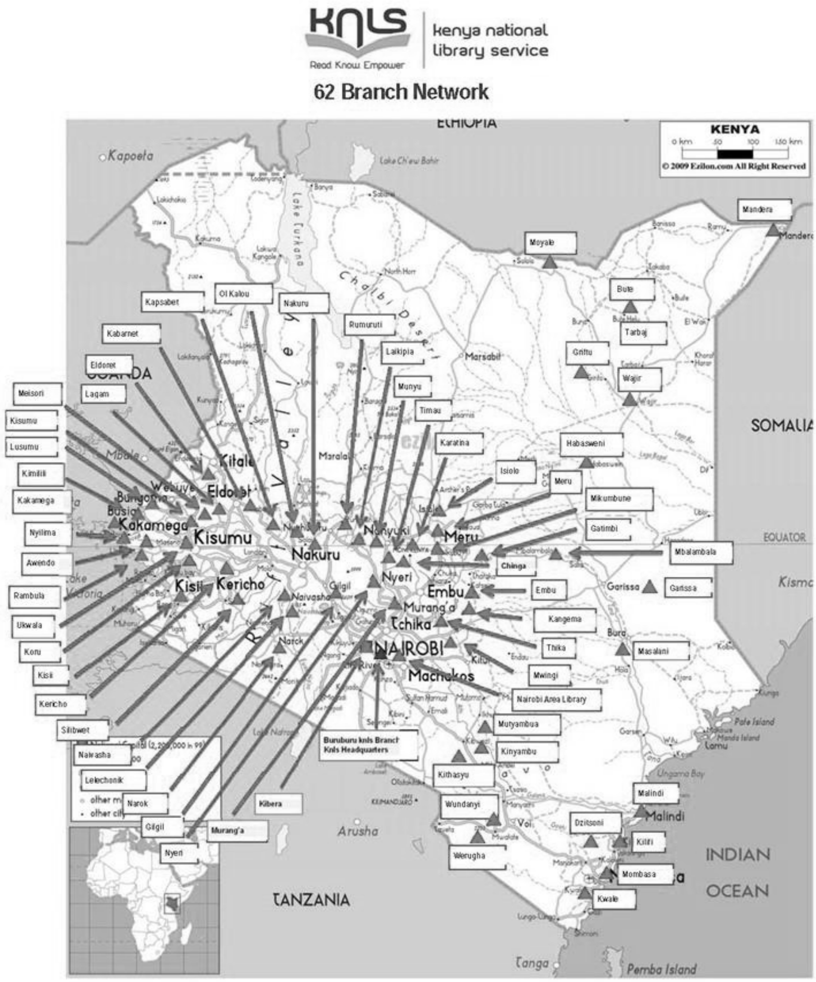
offers simple and interactive learning content on a range of digital skills for the 21st century such as Using a Touchscreen and Online Safety.
The project is now in the pilot stage and it is focusing on helping library staff and users gain basic digital skills through the blended model Good Things Foundation has created. This blended model combines the use of the Learn My Way platform together with tools and trainings for personal support for learners. In 6 months, a total of 270 learners have enrolled on the platform.

Capacity Building for Librarians

Partnership Development

The role of partners in transformation of Libraries cannot be underestimated. Technology related programmes is an expensive venture that requires a pool of resources. Knls has developed successful partnerships that have led to purchase and installation of ICT hardware and software, internet connectivity and capacity building for staff. Knls continues to nurture relationship with strategic partners so as to ensure that project objectives are met.

Figure 1. knls Libra



Recommendations

Public libraries should be prepared to invest in technology and embrace ICT as a means for enhancing information access and general services. The annual budget allocation for Libraries is way too low to support these programmes. This calls for Library leaders to intensify lobbying for Governments to increase budgets to support library services. In addition, Libraries should embrace partnerships with like-minded institutions to supplement the available resources and seek support for programmes.

Transformation of library facilities into ICT hubs has led to more opportunities for ICT-based services and programmes. This development comes with the need for staff to upgrade their ICT skills to maximize utilization of the resources and to support new programmes. In addition, some of the Library users have little or no experience in using Technology and require constant support from Librarians. Trained Librarians are able to help library users to utilize available technology to the maximum.

Conclusion

Integration of Technology in Library Services has proven to be a worthy value addition to the quality of services and programmes delivered to the community. In addition, it has created an opportunity for Librarians to increase their capacity to use technology for operations and for community service.

The use of modern technology in public libraries has contributed to an improved reading culture especially for children and youth. Availability of digital content in various formats has provided free and open access to information and knowledge for Library patrons. The Libraries have registered an increase in library attendance. Youth and adults who are not interested in reading physical books are showing a renewed interest in the library due to the new ICT-based services and programmes available. Strong partnerships have been developed between libraries, development partners, schools, parents and other local institutions.

Sustainability of the ICT based programmes will require a commitment by Governments and other stakeholders for resources, capacity building and friendly policies that will enable public libraries participate in Digital transformation of communities.

References

Kenya Vision 2030 (2003) Kenya Ministry of State Planning, National Development and Vision 2030.

URL

http://www.eifl.net/system/files/resources/201408/perceptions_of_public_libraries_in_africa_-_full_report_hi.pdf

http://www.knls.ac.ke/images/knls_Strategic_Plan_2012-2017.pdf

SDGs AND LIS IN THE SCECSAL REGION

MATHSWHIZZ KIDS: KENYA NATIONAL LIBRARY SERVICE MATHEMATICS DIGITAL LEARNING PROGRAM FOR PRIMARY SCHOOL CHILDREN

Purity Kavuri-Mutuku
Senior Librarian
Kenya National Library Service, Nakuru

and
Joyce Wanjugu
Senior Library Assistant
Kenya National Library Service, Nakuru

Abstract

The Kenya government initiated a Digital Learning Programme (DLP) in 2013. The programme targeted learners in all public primary schools and aimed at integrating the use of digital technologies in learning based on the believe that technology now defines our world and there is need to prepare our young people for today's realities. The first phase of the project estimated to incur a total coast of 17 billion Kenya shillings and expected to deliver 1.2 million devices in the next two years to cover all public primary schools. The pilot phase took off in 2015 targeting 150 primary schools (ICT Authority, 2016). However, the project implementation has been quite slow and frustrating due to lack of political goodwill, poor transport and communication infrastructure, lack of electricity in most of the rural primary schools and security. In addition, resistance by some school board of management (BOG) who are afraid of maintenance and other costs related with ICT, and teachers who lack basic computer skills.

This paper considers the experience and impact of Mathswizz, a mathematics digital learning program at Kenya National Library Service (knls), Nakuru. The project targeted the underserved children in six public primary schools and was supported by Electronic Information for Libraries (EIFL) Public Library Innovation Programme. The project uses ICT to entice children from the undeserved community to interact with technology as they learn mathematics with an aim of changing their attitude towards the subject. By using colored animations and worksheets in teaching mathematics, the project also aims at boosting self-confidence, stimulating lifelong learning technology based culture and help children improve their academic performance. The paper discusses implementation of the project, how librarians handled children and teachers lacking basic computer skills and provision of transport for children from the informal sector for successful implementation. The paper also considers the impact of the project, which has inspired a love for mathematics among children, *improved reading culture, increased the numbers of young library users and contributed to improved academic performance. It argues that the knls Nakuru library's experience offers an effective model of supporting access to quality education and replicable model for bringing ICT to underserved children.*

Key word: *Quality Education, Mathematics, Digital Learning, ICT*

Introduction

Globally learning institutions in both developed and developing nations at the primary, secondary and tertiary levels as well as adult education regardless of whether public or private are embracing the use of technology in teaching (Eaton, 2010). Some of the most notable global technology trends in education includes: technology use and integrations; expansion of mobile technology; asset based approaches to evaluation (at classroom level use of portfolios, at regional or national level use of benchmarks and at international level use of large scale frameworks); increased creativity; global approaches to leaning; global mobility and borderless education.

The Kenya government, since independence recognizes the importance of education as both a right as well as a tool for achieving social economic development. Unfortunately, the primary school curricula did not factor in technology and computer studies contrary to the secondary school curricula that incorporated computer studies. Introduction of compulsory free primary school education by the government in 2002 led to rapid growth of primary schools population across the entire nation. Currently, primary school population estimate is 10.4 million children in both public and private primary schools.

The Kenya government in an attempt to promote literacy carried out an Early Grade Reading Assessment (EGMA) pilot assessment in Malindi County in 2007. The assessment established that class 1 to 3 had low literacy and numeracy skills (MOEST, 2015). The study further argued that lower primary school pupils received less interest and attention from the head teachers, parents. On the other hand, the teachers were using wanting instructional methods. The results formed the foundation for the Primary Math and Reading (PRIMR) initiative a program implemented by the Ministry Of Education Science & Technology (MOEST) with financial support from USAID. The results indicated that significant gains in pupil literacy and numeric performance could be achieved through improved teaching instructions. PRIMR findings formed the basis of starting the TUSOME program a National Literacy Programme.

The Kenya government adopted the TUSOME program with an aim of working towards achieving Vison 2030, quality education through improved learning/teaching approaches. The program involves integration of ICT in teaching thereby distributing digital gadgets to all primary schools in Kenya targeting pupils in grade 1 to 3. However, technology roll-out in public primary schools has been quite slow due to a number of reasons: poor transport and communication infrastructure especially in rural areas; lack of internet connectivity; lack of electricity; fear of high maintenance and other costs by the head teachers & Board of Management; Technophobia among teachers and lack of political good will as well.

Kenya National Library Service (knls) through a variety of ICT programs is supporting the efforts made by the government to build a knowledge economy by providing access to digital technology, e-learning and ICT skills. One of these programs is a Mathematics Digital Learning project for primary schools children in Nakuru County and its environs.

Nakuru County is a cosmopolitan and agriculturally rich town with most of the town dwellers hawking foodstuffs. This means most of the parent's enroll their children in the public primary schools since they cannot afford the cost of enrolling them in private schools. Unfortunately, most of the public primary schools are under resourced. They lack computers, electricity and the teachers lack basic computer skills. This scenario disadvantages these children in terms of their mental development and creativity as compared to their counterparts in private schools. The trend has a long-term negative effect in their future. The performance of pupils in Nakuru County is quite poor especially in mathematics probably because of poor mathematics teaching approach used by most of the teachers. During the Nakuru county library outreach programs in public primary schools, we discovered that majority of the pupil's hated mathematics with passion. This prompted the staff to strategize on how to secure the future of our children.

Nakuru Library Mathswhizz project is the first of its kind to be offered by the Kenya National Library Service, which has 61 branches. The project was launched in 2016 with funding from the Electronic Information for Libraries Public Library Innovation Program (EIFL-PLIP) and was implemented in partnership with knls and Bookwave international.

Mathswhizz kids project is a mathematics online database preloaded with primary school mathematics curricula from class 1 to 8 and Grade 1 to 3. The program aims at encouraging children to enjoy learning mathematics in an interactive and friendly approach using animations and excel worksheets. The program also aims at bridging the digital divide, boosting self-confidence, changing the attitude of pupils towards mathematics and help children appreciate the value of technology in their future careers.

Why the library chose Mathswhizz program

A number of reasons motivated us to adopt the Mathswhizz database. The Mathswhizz program provides a participatory approach to learning; the interface is user friendly; the use of colored animations (robots) to explain different mathematics formulas; the database has audio and video options thus children can watch and listen as they take notes and the program is perfect platform for the smooth running of the government TUSOME program. The library has enough computers that are connected to a reliable internet and power supply courtesy of management and the American Embassy. The program also helps monitor the performance of the pupils and the teacher can send feedback to the pupils inform of a text message and add a stickers or emoji. This we found to be quite fascinating to the young learners.

Majority of the children access the database from the library since they cannot afford computer nor internet in their schools as well as from their homes.

Goals of the project

Initially the pilot project targeted 600 pupils from 6 public primary schools, however its popularity attracted 3 more schools and 100 other children who come on their own at the library every evening form nearby schools thus forming the homework club.

The projects overall goals were to:

- Provide access to relevant, adaptive and highly engaging mathematics digital content through the Mathswhizz database;
- Create awareness on availability of digital content and a passion for reading, personal growth and learning for primary school children;
- Conduct outreach session in 6 primary school;
- Improve the students performance in mathematics through the interactive Mathswhizz program;
- Change the attitude of pupils towards mathematics;
- Bridge the digital divide.

Initial preparations

The project implementation team selected six schools out of the 10 book clubs to participate in the program. A stakeholders meeting was held at the library targeting the head teachers from the selected schools, mathematics teachers, parents, Area chief and a representative from the county government. They were taken through the program and allowed to critics the database however they were all amazed by the functionality of the program and were in agreement that it would make learning and teaching mathematics not only easy for the learners and teachers but also an enjoyable experience.

The following schools were selected for the pilot project: Mwariki primary school; Racetrack Primary School; Lake View Primary School; St. Xavier Primary School; Kenyatta Primary School and Free Hold Primary School. Other schools that joined the program halfway were Darul Primary and Crater academy.

We held an official launch for the Mathswhizz programme. The chief guest was the County Director of Education and was accompanied by other government officers. Other key stakeholders who attended the launch included the Director KNLS, Bookwave international officers, chief, Local youth groups and Nakuru playmakers among many others. The message was well received Nakuru Library is the community digital hub for all.

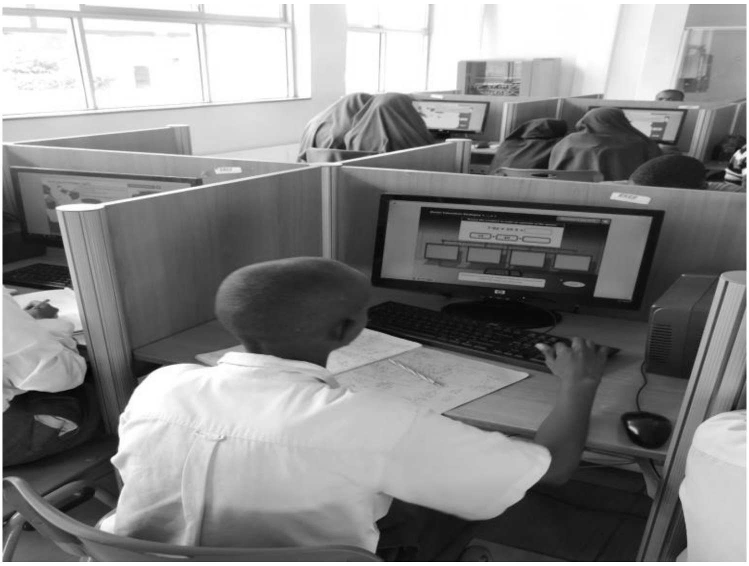
It was meant to sensitize the community on the role the library was playing towards supporting the government initiatives towards providing access to quality education to all underpinned by technology. The launch was covered by the local media and not only made the library more visible but won the confidence of the community.

Learning program

Every school choose one stream to participate in the Program. The library lesson was slotted in the school time table and allocated one hour. The librarians too came up with a time table indicating the specific day and time a school was expected to attend the library lesson. The lessons took place from Monday to Friday, class teachers, mathematics teachers and parents representatives accompanied the children to the library.

The first school to turn up for the training was St. Xavier Primary School with 60 pupils all from class six. The rest of the above mentioned schools were equally trained on different days on how to log in; access the syllabus that their level class; select the lesson; observe the examples and then perform the exercise as demonstrated. Children were also taught how to switch on the computer as well as switch off the computer; how to use a mouse, key pad and how to type. At the end of the lesson the pupils could easily move the mouse, click, select and type. The math lesson became quite enjoyable and teacher's role became minimal. The pupils worked in groups of two thus making learning highly participatory. Pupils never missed the library lesson and even those who initially had chronic conditions appeared to have forgotten their health conditions.

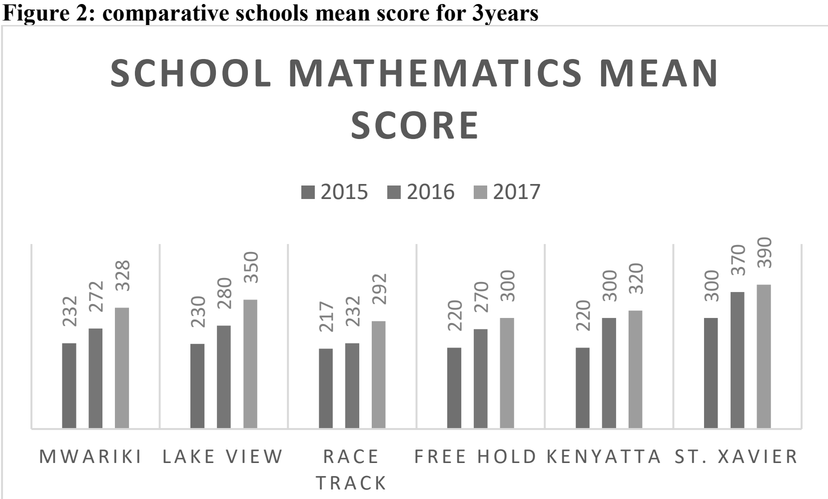
Figure 1: Mathematics lesson at the library



The above figure shows the high level of concentration by pupils during the mathematics lesson at the library. This clearly show technology plays major role in learning This gave teachers an opportunity to relax and concentrate on other subjects and pupils enjoyed discussing with their peers. The pupils bonded so well as each got support from other members whenever they got stuck. The children were enticed to first read a story book before they use the computers and this worked as motivation to complete a story and summarize in order to access a computer.

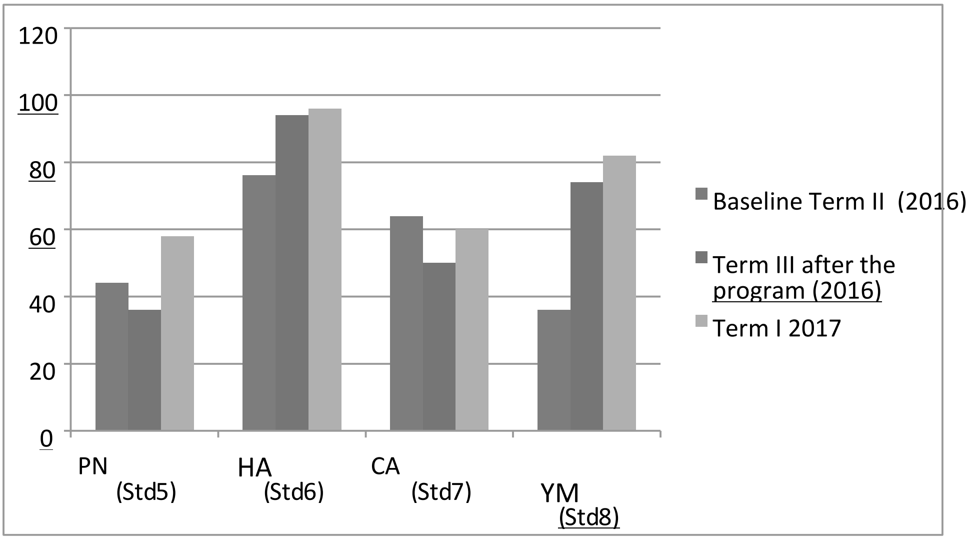
Success evidence

Figure 2: comparative schools mean score for 3years



From the above figure, the schools mean score has been on the increase since they started using technology in learning. This clearly shows technology plays a major role in influencing the general performance of pupils. Technology boosts the understanding of a child since they get involved in solving problems on their own. Thus making them to remain focused.

Figure 3: Mwariki primary school random sample



The above figure summarizes performance of pupils from Mwariki primary school, which indicates a notable general improvement in mathematics. Though the pupils graduated to the next class, their knowledge of mathematics remained superior to the change. The Mwariki Primary mathematics teacher, Mr. Bushnell said:

"The virtue online math tutor is interesting interactive software that has made mathematics learning fun and easy to follow. Those pupils, who have used this platform, have significantly had their score improve. It is projected that if the program continues uninterrupted then its full impact will be realized and mathematics subject will never be the same again. We strongly commend the great work done by the KNLS-Nakuru branch and also recognize the unwavering support of our donors who have made this great work happen."

Benefits of the Program

- Change of attitude towards mathematics: The children no longer feared mathematics they embraced the subject with ease and with a lot of enthusiasm. The subject they once dreaded changed to be their favorite referring to it as the game of numbers.

- Improved academic performance: The pupils who participated in the pilot project recorded a great improvement in all the subjects and their mean score since then has been on the increase
- Children acquired basic computer skills thus triggering a love for technology in learning: Majority of the children had never seen a computer before but they had the opportunity to not only see one but also learn how to use it. During their free time they typed letters to their parents teachers and the librarians.
- The children gained confidence and improved their self-esteem: When we started the program some of the children were quite withdrawn and never wanted to participate in class probably fearing to be ridiculed by their peer. However, the class became so lively and even the very quiet children became very active.
- Reduced pupils and teacher absenteeism: They all never wanted to miss the library lesson
- The library membership for both junior and adult went high as well as institutional membership: Many parents opted to be bringing their parents to the library and in the process registered their families as library members.
- The library received International and local recognition: The library received a lot of media coverage thus making the Nakuru library visible in the world map. We won international recognition and presented our success story at the Next Library conference held in Denmark through EIFL sponsorship. Locally we won an award as the best public library of the year 2017.
- Knls board supported the introduction of the program in three other branches namely Kibera, Narok adn Buruburu library
- Early this year (2018) the Nakuru Youth Bunge and the Ministry of Education approached the library has the digital learning programs expert to help implement the TUSOME project which had stalled in 26 public primary schools within the county(2018)
- Inadequate computers : the number of children keeps on increasing day by day but the number of computers remains the same.

Challenges

Most interesting we never faced any form of resistance from the teachers, parents or pupils. They all embraced use of technology with an open mind. Every program comes with its own unique challenges and it all depends with how we manage them. Some of the obstacles that we faced during the implementation of the program were:

- Lack of basic computer skills: Most of the children and teachers lacked basic computer skills and we were forced to start by training them on basic computer skills. Moving a mouse was the most difficult for a start but later became a game.
- Lack of computers in public primary schools & Homes: the government is yet to put proper ICT infrastructure in public primary schools and this meant children could only use the program the library. Hence children couldn't practice more during their free time in schools or at home.
- 'Matiang memo' The Cabinet Secretary for Education issue a memo barring students from leaving the school compound during normal school time. This made us adjust the program and so all the pupils came for their library lesson on Saturdays at the library.

Conclusions and Recommendations

Technologically enabled public libraries in Africa are in a position to help government achieve quality education through introduction of technologically enabled creative and innovative services to citizens. The public libraries are places for lifelong learning and governments should invest more in establishing digital hubs or computer lab where children and the community at large can learn basic computer skills from an early age. It might be difficult for the government to equip all schools with computers but for a public library it is affordable. Our experience demonstrates, that public library can add significant value to the formal education.

We recommend technology integration in education in order to inspire positive changes in teaching and learning. Technology makes learning interesting, enjoyable and helps develop a lifelong reading culture. It makes teaching easier for teachers and helps track the performance of the pupils. At the same time students demonstrate improved academic results and increased motivation to study.

References

Eaton, S. (2010). Global Trends in education in the Twenty-first Century. Centre for interactive learning and collaboration (CILC).

ICT Authority (2016). Digital Literacy Program progress(DLP). Nairobi: ICT Authority.

MOEST (2015). Brief on Tusome Early Literacy Program.

INSTITUTIONALIZATION OF COMMUNITY LIBRARIES IN THE SLUM COMMUNITIES OF KAMPALA: A PARTNERSHIP ANALYSIS

Lois Mutibwa Nankya
Assistant Lecturer,
East African School of Library and Information Science

and
Ronald Ssentuuwa
Project Manager
SOS Children Villages Uganda

Abstract

Reading is a key evidence based intervention for child development besides play and home visiting that enhances language and vocabulary acquisition. However, literacy acquisition for quality education remains a threat to global development. Such is not only attributed to absence of public or community libraries that are the key gatekeepers to reading; but this situation is worsened by their none-existence, mismanagement and absence of reading initiative. In partnership with Children International in Uganda, Makerere University, East African School of Library and Information Science (EASLIS) and, other stakeholders; a community reading programme was initiated in the slum communities of Kampala. This was intended to institutionalize community library services to serve the urban poor children deprived of the right to access information (reading materials) given the environment and their settlement patterns. Using applied research, participant observation, document review and reflective community meetings data was collected about this programme. The focus was on primary activities such as reading literacy programme in the urban poor communities of Kampala, i.e. 8 reading tents, 2 community and 4 mobile libraries were established. In this partnership 10 university volunteers were trained and approximately 1543 children were reached. Peer to peer mentorship, exchange visits and learning were initiated; increased school attendance and enrolment were realised and partner involvement with organisations like Kampala Capital City Authority, National Library of Uganda was started for sustainability of the programme.

This paper will present experiences, lesson learnt and challenges in partnership to institutionalize community libraries for reading in the urban poor communities of Kampala.

Key words: *Reading, Literacy, Library partnerships and Institutionalization, Community libraries and Slum communities*

Introduction

All over the world, libraries play a key role in creating literate environments and promoting literacy by offering relevant and attractive reading material for all ages and all literacy levels. They assist in finding, using and interpreting appropriate information that opens up opportunities for lifelong learning, literacy enhancement, informed citizenship, recreation, creative imagination, individual research, critical thinking and empowerment in an increasingly complex world (Krolak, 2015). A library is defined by its role in information provision. Literacy is a key factor in ensuring development of a country, if a country is not literate, it will impact on the development of that country. Uganda is one of the developing countries located in the eastern part of Africa. According to the 2014 estimates, Uganda's population has been growing at an annual rate of 3.2% to the current 30 million people while the urban areas have registered an annual rate of 5.1%. At this rate, Uganda will have a population of about 68 million by 2035, 30% of which will be in the urban areas. Uganda is among the top 10 countries with the highest fertility rates and the third highest rate of natural population increase in the world.

Currently, the government of Uganda has put in place policies that are better targeted to the urban poor. Notably, the Ministry of Gender, Labour and Social Development has created the Secretariat for Orphans and other Vulnerable Children (OVC), as well as the Ministry of Housing, Labour and Urban development which in turn created the National Slum Upgrading Strategy and Action Plan. However, these cannot fully achieve their objectives without considering the role of education in improving literacy. According to Uganda Bureau of Statistics, the literacy rate among persons aged 10 is 73 percent in 2009/10. Kampala, the capital city had the highest literacy rate (92%) compared to other regions. But most of these children, even though they attend school, they end up performing poorly because they do not know how to read and write.

So, several initiatives to try to improve literacy levels in Uganda have been devised. Such include; two relevant policies: the Language Policy in Education as articulated in the Government's white paper on Education (Republic of Uganda 1992:15-16) and the Policy of Availability of NTBRNs. Parallel to government efforts to boost literacy in primary schools in Uganda, there have been other interventions by various organizations that are intent on addressing reading and literacy problems among Ugandan school children for example National Book Trust of Uganda (NABOTU) in association with the Reading Association of Uganda (RAU) have set up many reading tents and activities throughout the county. Several Non-Governmental Organizations have also been involved in the same drive. However, as noted earlier, there are many gaps in ensuring that all these programs are fully utilized and that they benefit the people of Uganda, specifically those in urban areas in Uganda. In addition, Uganda is one of the signatories to the Lyon Declaration on Access to Information and Development of 2014, which notes that access to information, supports development by empowering people, especially marginalized people and those living in poverty. Thus the need to appreciate the role libraries can play to enhance literacy towards the development any country.

Quite often, it is reported that, there is lack of a reading culture in among children in many developing countries. This is attributed to poor reading culture in our communities. Thus African societies have been labelled with phrases such as an oral society or one that lacks a reading culture (Mulindwa, 2001). However, the underlying causes to this situation go without a mention. But there is a need to create a favourable conducive climate to nurture the desired reading outcomes for child wellbeing and development outcomes of which libraries should be placed front to this play (Abidi, 1991, Kigongo-Bukenya, 1999 & Sangakeo 1999). Abidi (1991) asserts that the educational aims of the school library should include the encouragement of a reading culture to develop independent reading among pupils and giving social training to young children; unfortunately, there is no national school library policy in Uganda and school libraries in Uganda have been neglected for a very long time; as a result, libraries frequently did not exist or are inadequate in the schools that have them (Kigongo-Bukenya, 1990). These observations are not different in the communities of Uganda and more lacking in the most vulnerable communities.

So, Sangakeo (1999) emphasises the role of a librarian in a sense that, librarians should help develop among the readers a pleasant and positive attitude towards reading. However, this remains challenging since most times in housed waiting for the readers to access the services. Nalusiba (2010) emphasizes that, librarians have the responsibility and opportunity to go out and tell the public about their collection and find out the reading materials the public would be interested in reading in order to attract people to use the library. Generally access to relevant reading programmes is still a challenge in many African communities. Amadi (1981) stated that libraries in Africa needed to be adapted to the communities and societies they intended to serve and pay greater attention to information packaging and presentations in order to achieve full maturity and effectiveness of library services. This necessitates the urge to make users feel involved, that is, to make them feel that the library belonged to them (Issak, 2000). Tedd & Hartley (1999) affirm that libraries remain potentially the strongest and most far-reaching community resources for life-long learning. In particular, Tedd & Hartely emphasise that public libraries do not only provide access to information, but also remain crucial to providing people with the knowledge necessary to make meaningful use of existing resources. Whereas Julien & Anderson (2002) & Julien, (2003) confirm that public libraries provide a bridging gap for the application of the ICT infrastructures in promoting information literacy among the population, especially for local communities.

Therefore, integrated Libraries services provide a significant point of access to information by the public at minimum cost (ARCL, 2006). In addition, libraries play a key role in satisfying people's demands for information in contemporary society so as to improve on their literacy. Governments around the world have recognized the critical role of public libraries in developing the information literacy skills of their citizens (Harding, 2008). However, public libraries require financial, ICTs and internet facilities (Harding, 2008). Indeed as pointed out by Julien & Hoffman (2008), public libraries have been used as appropriate sites to implement Community Access Programs (CAP), an initiative which aims at providing affordable public access to the Internet with the view of providing the skills needed by information users to access Information Literacy training programs. Whereas community libraries are acknowledged as important source of literacy, their absence in a rural and hard to reach communities requires urgent collaborative stakeholder's engagement to support this cause.

Libraries play an important role in providing a wide range of reading materials free of charge to parents and children who cannot afford to constantly buy new material. School libraries exist but unfortunately many children learn only the technique of reading at school and often do not experience anything more challenging than textbook based learning. To avert such challenges, Children International in Uganda and its development partners initiated the integration of library services in urban poor communities of Kampala within the social context to facilitate lifelong learning. Libraries are appreciated as open gate ways to nurturing literacy with the application of Information and Communication Technologies (ICTs).

Literacy is defined as one's ability to read with understanding and to write meaningfully in any language. The ability to read and write is an important personal asset, allowing individuals increased opportunities in life. A literate person can read and understand basic instructions that may be written on some of the items that households use on a daily basis. Literacy is a key factor in ensuring development of a country, if a country is not literate, it will impact on the development of that country. Children need to be introduced to reading and literacy at an early age. This will enable them become lifelong learners and also improve their literacy levels. When children are introduced to learning when young, they certainly end up being readers. In addition to the skills they learn from school and at home, they also can become literate by learning how to read using the opportunities that are around them, one of which being libraries. There is need to ensure that libraries are made relevant to Ugandan situations and fit to meet respective community's needs.

It is unfortunate that in many developing countries network of community libraries is not well developed and it is lacking. Therefore, community and public libraries support information literacy skills through a number of interventions including adult education as a strategy for lifelong learning. Community libraries have a capability of providing access to information and offering training courses to improve people's information literacy skills. Libraries play an important role in literacy, and if community libraries are properly empowered and supported, it helps in achieving the development of a country. This paper is based on a study carried out on box libraries in slum areas in Uganda. It provides key experiences, activities carried out, challenges, benefits and recommendations. The study was based on participant observations and interviews with children, community members, volunteers and library committees.

Problem Statement

Even with the increasing literacy interventions in Uganda, the country is still facing challenges of illiteracy. Several initiatives have been started to improve literacy in both urban and rural areas in Uganda but there is no proven evidence of the role that these interventions play in communities and whether they have been able to benefit the communities where they are located. There is therefore need to find out the impact of such initiatives on literacy development in urban areas and also put in place strategies to ensure that community libraries can play their rightful role in improving literacy in slum areas in Kampala.

Methodology

The purpose of the study was to assess the Institutionalization of Community Libraries in the Slum Communities of Kampala and establish the role of key partners in support of community libraries located in slum areas in Uganda. Specific objectives included: Establishing the communities skills and knowledge acquired in managing community libraries, explore the community systems to delivery library services through collaborative partnerships with stakeholders and ascertain the impact of training, mentorship and supervising community volunteers in running community libraries and reading activities. The study was carried out in Kampala district in the urban slums communities that had benefit from the program. Such communities included Katanga & Makerere kikoni 11 slum –Kawempe, Makerere Kikoni- Lubaga & Makerere Kivulu- Central Kampala Urban City Authorities.

The population of this study involved both direct and indirect beneficiaries; the direct beneficiaries included children who participated in the reading tents, reading clubs and support the community box libraries. Participants were purposively selected since they had benefited from the activities. Purposive sampling was used to target population which was used to select elements to participate in the study. The researchers used their own judgment about which respondents to choose and selected only those who best met the purpose of the study. According to Bailey (1994) a researcher uses his /her own judgment about which respondents to choose and picks only those who best meet the purpose of the study.

Eighty (80) children were interviewed with the view to obtain their feeling about the reading activities. They were requested to expense their feelings in writing and drawing. Moster & Kalton (1997) described interview as conversation between the interviewer and the respondents. The researchers used in-depth interview in order to obtain detailed information for the study by interviewing children, parents and volunteers with a view to finding out the contribution, practices and challenges they engaged in as they support and utilise the activities. Besides the interview, the researchers undertook participant observation as methods of research. They directly participated and supported all the activities during the reading tents, reflective community meetings, reading days and book box libraries. During these events they interacted and took part in the activities like the beneficiaries. Participant observation was applied where the research actively participated in the programme activities and interacted with the beneficiaries routinely. This provided the researcher with in depth understanding of parents and children's reading needs and habits. The researcher noted the behaviours of children towards the interaction with the reading materials, parents and community participation and support offered to the children. This provided an opportunity to document and pick feeling and verbal quotations from the beneficiaries.

To further detail the findings, in-depth interviews were conducted with the key stakeholders who also participated in the community activities. Those who participated in the interviews included volunteers on the library committees, teachers, stakeholders and student volunteers from Makerere University as well the programme staff from Children International in Uganda.

Twenty (20) parents who had children participating in the activities, fifteen (15) volunteers who were facilitating the event mainly teachers and Makerere University volunteers were interviewed. Also the researchers used document review specifically related to this intervention since it was applied programme to obtained detailed information. This provided with contribution, best practices and challenges of the intervention. There was review of interventions activity reports, quarterly and annual report as shared by the organization.

Significance of the Study

The study will be relevant to institutions that are involved with communities since they will learn how they can improve literacy through developing community libraries. Academic institutions that are involved in LIS education will also understand better the role that community libraries should play in improving literacy levels.

The study will provide useful information to educators and trainers, researchers, students, practitioners, policy makers, civil society, and international development partners who have an interest in literacy and information work. This study will be of interest to development partners and other stakeholders involved in literacy initiatives.

Presentation of Findings

Children International in Uganda in partnership with Makerere University initiated a reading literacy programme in the urban poor communities of Kampala, in a deliberate effort to promote reading for children in the urban poor communities of Kampala district and building on the core text book donation programme of Children International in Uganda. A joint partnership with Makerere University East African School of Library and Information Science (EASLIS) was sought toward this drive. In this drive, a key stakeholders mapping was done to explore the possibility of attracting partnerships for sustaining these interventions. Partnership was built from the community level to national level. The focus was on leveraging resources to ensure efficiency and effectiveness to implement the programmes. Nassimbeni & de Jager (2016) explained that, to service the underserved population like the blind in South Africa, a decentralised approach was adopted, by locating new services in established public libraries in rural communities to specifically promoting new services to visually impaired potential users. This explains the approach that was adapted by CI and its partners where several spaces within the slum communities were identified for staging the reading activities so as to reach out the most vulnerable.

Reading Promotion Activities

According to the project reports, 8 reading tents were held within the communities, four book libraries were established with the trusted households of committed community members. 5 one-day reading tents were held in these slum areas. During these events, all children from the nearby community were invited to participate. Key activities in these were reading, storytelling, singing and dancing, reading competitions, reading circles, word games, debates and quizzes and creative work like clay moulding, art work and outdoor and indoor games. Like one famous quote that, *"a reading tent removes fears of books from* *the children".* Such a testimony demystifies the saying that, African do not read or don't like reading. It is important to building the confidence to allow children interact with reading materials at an early age, in addition to creating opportunities to ease access to reading services. Figure 1 below shows evidence of one of the reading activities carried out in one of the slum areas in Kampala.

Figure1: Children participating in reading tent activities, *'reading insn't reading a text'*. Photo by Kyalingoza Ronald

A total of 1,543 children were mobilized and participated in the reading tent activities. The table below shows participation of the children in the activities according to zones.

Table 1: Children participation in the Community reading activities:

Communities	Place held	No. of Participants
Kikoni Zone	West Valley Primary School	320
Kiwunya Zone	Children International Site	232
Kivulu Zone	Grace Primary School	361
Nakulabye Zone 9	Children Center	219
Makerere 2 Zone B	Remy Infants	187
Total		1,543

Book Box library establishment

The programme Manager, CI is quoted saying *"most time reading activity are one off activities that, chill the thirty of those in need of reading materials, there is no continuity in supporting the communities to continue with the reading activities."* Therefore, in every community where the reading tent was held, a

community book box library was established with a donation of various reading materials. Reports revealed that, box libraries were set up and each community given a total of 1200 books. The box libraries included; Katanga, Makerere West, Kikoni and Arali Community Box Library. For each box library, a community leader (Local Council 1) was also attached to be in charge of the books. Then several issues were also agreed upon on how and when these materials were to be accessed.
Figure 2 below shows officials from organisations officiating upon the donation of books after one of the reading activities.

These libraries were also offered a borrower's book so that books can be borrowed once a week and during the holidays. LC Chairperson in Makerere Kinoni noted that *"the activity does not only promote reading but a child protect event for our children who would be in the community watching movies or collecting scrap"* He further emphasized that, identifying spaces where the reading tents would be staged was not so hard since the owners of this land too accepted and loved to host the children. This approach was based on the knowledge that the many disadvantaged people who were not taking up library services, did not recognise that libraries and library services could be intended for them as well as for sighted readers. The new approach to delivery required collaboration among three spheres of government: national, policy makers, local leaders, communities, parents and children.

Figure2: Community book box library donationto Katanga; left Director National Library of Uganda & Right Commissioner Community Development & Literacy Ministry of Gender Labor and Social Development.

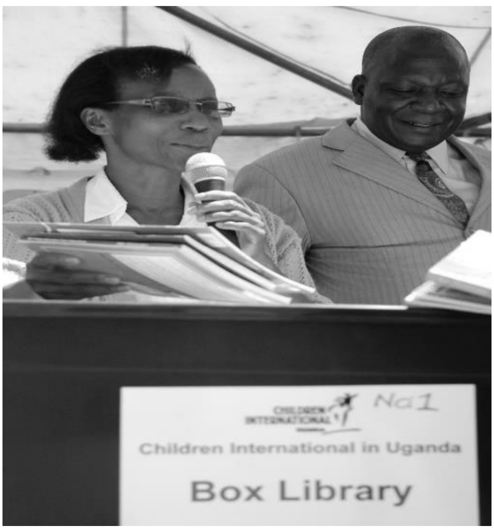


Photo by Kyalingoza Ronald

Establishment of Community/school libraries

In partnership with the community schools, two libraries were set up. This was intended to reach out to the children with adequate reading materials at school as well as, just in case one could miss out on opportunity to use the community book box libraries. According to the reports, these libraries were established at Grace Fellowship Primary School and Makerere West Valley Primary School. The library volunteer reported that "they would be accessed by the members of the schools but during weekends and the holidays these would be accessed by the community members". One teacher at Makerere Kikoni lamented that *"parents and community members too have access to these libraries"*. The libraries were furnished with books, toys, additional materials like mats, furniture, chats and the libraries were fully painted and furnished. Staff at CI noted that, reading promotion is not only about reading the text materials, as well as ensuring that one can tap into existing resources for such foundations. In taping into community resources, for instance one library teacher was also appointed to be in charge of the library, they would be volunteering to do this in addition to their usual teaching role as reported by the Head teacher. This agrees with findings by Bazzoli (1997) who noted that, ongoing development of the library services may include the importance of the library to local teachers, and the impact of the library on classroom activities and learning; differences in the reading habits of boys and girls who use the library and some possible reasons for those differences; and how the collection of reading materials in local languages and about local situations might be key in terms of community libraries and the development of a reading culture elsewhere in Africa.

Capacity building

In partnership to ensure institutionalization of library services in the urban poor community of Kampala, several capacity building activities were undertaken as reported by the various participants. The capacity building was built on leveraging resources and strengthens amongst partners. It was revealed that a series of trainings were conducted for both parents, volunteers, teachers and children to access and use the library services. These orientations were conducted in partnership with Makerere University school of Library Science, National Library of Uganda, Library and Information Science Association. It was observed that, a democratic library committee was selected with support and guidance from the technical group and CI Uganda. Following the selection of the committee, trainings were held. Below are details of committee members that were trained to support on delivery of services to children.

Table 2: The table below shows the number community members that were trained to support on delivery of services to children

Community	Training Venue	No. of Participants
Kikoni Zone	West Valley Primary School	52
Kiwunya Zone	Children International Site	53
Kivulu Zone	Grace Primary School	51
Nakulabye Zone 9	Children Center	23
Makerere 2 Zone B	Remy Infants	45
Total		224

It was observed that, 5 committees were set up in Kikoni, Kiwunya Zone, Kivulu Zone, Nankulabye and Kikoni Makerere 2 Zone B and offered trained as manifested about, a total of 224 volunteers were trained. They aimed at stipulating the roles of these committees with focus to increase use of the box library; organize activities to attract children to read; support the library; to involve the community; to get assistance and to work with the leaders. Membership to these committees comprised of: Librarian/custodian of the books, Teachers, parents, LC/leaders, Youth, and a student representative. Structure of the committee was: Chairperson, Vice Chairperson, Secretary, Treasurer, Mobilizer/Publicity Secretary and a member in charge of welfare Affairs. So as to ensure continuity of the service delivery to children, several ongoing mentorship and supervision activities were offered to the library committee. This included orientation meetings for Library committees. It was reported that 5 sensitization meetings were held with these committees in duration of a year for each library committee.

During orientation, the members were reintroduced to: purpose of the box library, materials found in the library and general library work like accessioning cataloguing, circulation, stock taking, jacketing, and security of library materials. *"Orientation meetings, were hands-on training conducted for committee members and children were involved in the stamping, jacketing and accessioning of materials"* reported by the trainer. This was done to ensure that they can continue with the work even after the training since they would know the routine activities carried out in a library. As part of the capacity building activity, library committee member reported that library visits were conducted in order to learn and share experiences amongst themselves but also with other communities' libraries like Nurture Africa, located in Wakiso District. This provided them with an opportunity and to share ideas, asks questions and plan on how they would apply the same lessons in their own libraries. Also sensitization talk for the members of the Five Box Library committees was also conducted. A professional Librarian from the National Library of Uganda presented a talk on the value of reading and what benefits a library can have for the community. She shared her experience through the several tents they have held and since NLU has worked with the community before she was able to sensitize the participants. They were also able to ask questions especially to do with how to manage a community library and how to encourage children to read.

Partner and stakeholders mapping

Many times' development partners implement interventions but sustaining them after the life span of the programme as always has its challenges. Sustainability is constrained by lack of adequate financial resources, manpower and infrastructure. Though Children International in Uganda provided funding for, training and setting up and monitoring the library activities in the slum of Kampala, CI was cognizant of the existing government, community and political structures to ensure buy in and support of the programme across board. In this attempt therefore to ensure programme sustainability, Children International in Uganda, indentified both the boundary and strategic partners for implementation of the program. During the implementation process Key partners who were identified and significantly contributed to the success of the programme.

- Makerere University, East African School of Library and Information Science – technical support and overall monitoring of the program. Technical support include: training the committees, setting up and library and monitoring the libraries.
- National Library of Uganda: National mandate of ensuring the adherence to quality standards, provision of resources, guidelines and inspection by the staff.
- Kampala Capital City Authority – It is mandate of the city authority to provide reading spaces for all children and adults regardless their backgrounds. In close collaboration, co funding children activities and allocation of spaces for running community reading tents. They further provided follow up activities, among others.
- Uganda Children Writers & Illustrators Association: supporting the identification of young authors, participated in the mentorship and support of parents to develop the reading skills of their children.
- Uganda Library and Information Science Association: This was facilitated with guidelines and supporting the library volunteers during this work. The library association further provided guidelines on training.
- Local leaders, parents and communities: They were key secondary beneficiaries for the intervention. They supported with mobilization, sensitization and management of the community library services. They

provided security and spaces for establishing the book box libraries and where to stage the community reading tent.

- Children: were the primary beneficiaries, they participated in the activities and directly supported the implementation of the key activities. This created ownership and ongoing support to this intervention to date.
- Ministry of Gender Labor and Social development: this was mother ministry responsible for children affairs, it houses the National Council for the Children but also responsible for community literacy activities. Such partners were to advocate and supported the operationalization of community library services.

Discussions

During all these activities discussed above, several benefits and challenges that the committee members, parents, teachers and children presented. From the interviews held, and through observation and sharing of experiences with various stakeholders, it is evident that the libraries that had been established in their communities had been of great benefit. Most of the community members said that it helped them improve reading for them and their children. Some parents even said that before the libraries were established, they did not know how to help their children with their homework but with the establishment of the libraries, monitoring and helping their children with homework was much easier. Some said that it helps their children to socialise and use their time profitably. One parent said that before, their children would loiter around (since it's a slum area) but now during the weekends and during holidays, the library kept their children busy in a profitable way. Other benefits they mentioned were; it helps build their knowledge, it helps supplement on what the teachers have taught them in school; it helps enhance their spelling and pronunciation of words. It helps them verify what has been taught in class thus further exploration since it enhances understanding of what was taught. Another interesting benefit was that it helps them in engaging in constructive conversations and discussions, helps them get entertained and relaxed and also helps improve improves on child's talents e.g. drawing, reading etc. Others were: On site peer to peer mentorship amongst volunteers; increased school attendance and enrolment; improved reading in the communities and exchange visits amongst to share best practices

Some parents said they did not bring their children to the libraries because of: lack of awareness of the library; some are afraid of replacing or refunding books in case their children tear or lose them; some said some books are limited to classroom mechanics rather than those for self-help or exploration; Lack of study guidance, that is for some of the box libraries, there was no one to help the children as they use the books; Others mentioned out-dated books. Some of the community members said that they do not know how to read and thus can't help the children to read the books.

- Lack of funds for purchasing library materials, i.e. stocking these libraries and monitoring these libraries.
- Lack of awareness on what libraries can do. Even with these libraries in place, many community members did not know about these libraries. Thus the need to let them know about these libraries and the role they can play.
- Inconvenient access times for the library. Some of these libraries were run by teachers who would also have their usual classroom duties so most times, the library would be closed and so community members would fail to access the documents in the library.

Conclusion

Community development is not easily attained in isolation but combination of more multiple partners plays a significant role. Important to note is that, there is willingness to collaboration in identifying community library needs and services, coordinating services, and reporting to the community, partnership participants showed less alacrity in joining forces to reduce redundancy and increase efficiency. Patterns suggests that organizations best benefit from working together on activities that maintain existing power relations and that have the potential to add prestige and attract new clients. Collaboration in these areas may be essential to building a foundation of trust that leads to future cooperation in more sensitive areas. Such has implications for ongoing development of the library services, including the importance of the library to local teachers, and the impact of the library activities and learning; differences in the reading habits of those who use the library and some possible reasons for those differences; and how the collection and development of reading materials is relevant to beneficiaries as well as other activities that can be integrated and about local situations might be key in terms of community libraries and the development of a reading culture elsewhere.

Recommendations

- Local ownership of the programmes to create demand for services: Parents have a role to play in ensuring that these libraries are utilised: There is need for a sense of ownership i.e. the children and the parents; They need to inform the others who are not aware of the use of the library i.e. publicity at every opportunity, for example at school, parties, speeches, workplaces etc. and the need for coordination amongst parents in regard to usage.

- Promotion of the local publishing industry and youth authors: It's important to invite some local authors who would read some of their books to the children. Children can then relate with such books since the examples are easy for them to understand and the language also simple. But also this will motivate child to write their own stories, it is likely to boast the local publishing industry.
- Contextualization of reading activities and library services. This will help to meet the demands of the various stakeholders and improve on the quality of services being offered to the communities. More activities should be held especially those that encourage reading e.g. word games. More involvement of partners both national and international to build more libraries and also monitor such libraries.
- Advocacy and campaigns are important: Partnerships are built by strong advocates, but this skill is lacking among librarians and information service providers. For instance there is need for more government support for these libraries. Some of the schools in slum areas were UPE schools but they didn't even have basic materials in their schools. The government should ensure that more relevant materials are provided in these schools. More sensitisation for parents and children in order to understand the role of education and thus the role of reading and literacy.

References

Abidi, A.H. (1991). *Communication, Information and Development in Africa.* Bano Abidi Publishers .

Amadi, A.O. (1981). *African Libraries: Western tradition and colonial brainwashing.*

American Library Association (2000) Presidential Committee on Information Literacy, Final Report

Bailey, K. (1994). *Methods of social research 4th ed*. New York: The Free Press.

Bazzoli, G.J., Stein, R., Alexander, J.A., Conrad, D.A., Shoshanna Sofaer, S., & et al (1997) *Public–Private Collaboration in Health and Human Service Delivery: Evidence from Community Partnerships.*The Milbank Quarterly

Dimanin, P. (2012). *An institutional, community, and household contextual analysis: Exploring livelihoods of the urban poor in Kampala,* Uganda

Issak, A. (2000). Public Libraries in Africa: Synthesis Report. In Issak, Aissa, ed. Public

Libraries in Africa: A Report and Annotated Bibliography. Oxford: International Network for the Availability of Scientific Publications. P. 3-22.

Jager Karin de & Nassimbeni M (2007). Information Literacy in practice: Engaging public library workers in rural South Africa, Sage Publications:

Large, A. Tedd, L.A and Harteley, R.J (1999). *Information Seeking in the Online Age: Principles and Practices.* London: Boweker Saur.

Mulindwa, G. (2001). *"Can reading research in Africa be done in isolation? The influence of Literacy, education, publishing and the book industry on reading in Africa?"* paper presented at 67th IFLA council and general conference. August 16-25, 2001.

Nalusiba, P. (2010). *Strategies to develop a reading in primary schools in Uganda: Case study of selected Universal Primary school in Kampala District,* unpublished dissertation Makerere University

Nassimbeni, M. and De Jager, K., (2016) *Even We Can Read: Evaluating the Impact of a Project to Expand Library Services to Visually Impaired Users in Rural South Africa* International Journal of Libraries and Information Studies Libri, Volume 64, Issue 3, Pages 247–253
National Slum Upgrading Strategy and Action Plan http://worldpopulationreview.com/countries/uganda-population/ viewed on 26th April 2015

Ogwang J (2013) Slums present a fierce challenge to Uganda's urbanization effort Publish Date: Mar 13, 2013 New vision

Sangkaeo, S. (1999). *Reading Habit Promotion in ASEAN Libraries.* Scarecrow Press, Metuchen, NJ.

Uganda (1992) *Government White Paper on Education Policy Review Commission Report:*

Education for National Development Kampala: Ministry of Education &Sports.

THE ROLE OF BUSOLWE COMMUNITY LIBRARY IN IMPROVING THE CHILDREN'S READING CULTURE IN LUNYOLE LANGUAGE

Jane Kawalya
Part-time Lecturer
Department of Library and Information Science
East African School of Library and Information Science
College of Computing and Information Science
Makerere University

Abstract

Reading in mother language plays an important role in children as it is the beginning of communication and consolidation of cultural norms. Busolwe Community Library is making an effort in improving the children's reading culture in Lunyole Language. The aim of this paper is to examine the role of Busolwe Community Library in improving children's reading in the Lunyole Language. The objectives are: to investigate why Busolwe Community Library was established; its activities in improving the children's reading culture in Lunyole Language; the challenges faced; the achievements made; and to make strategies for more improvement of the children's reading culture in Lunyole language. The paper applied a case study design and adopted qualitative research approach. The informants were purposively selected- two members of the Lunyole Language Association, the Librarian of Busolwe Community Library and the Director of Mangrove Primary School who was formerly the librarian of Busolwe Community Library. Data was collected through face to face interviews, observation of classroom sessions of children reading in Lunyole language at a selected primary school, and document reviews. The data analysis and presentation were through descriptive, narratives, quotations supported by illustrations.

Key words: *Busolwe Community Library; Children's reading culture; Lunyole language; Community libraries; Uganda*

Introduction

Although public libraries in Africa provide people with reading materials, they have not been successful (Mostert 1998). The alternative suggested by Dent and Yannotta (2005) are the community libraries, since they have shown great promise in providing communities with reading materials and other services. By the late 1960s it was realized by information professionals in Africa that there was a need of access to information by the rural communities which resulted into projects such as Village Reading Rooms in Botswana (Rosenberg, 1993). Sturges (1994) identified rural community-based projects that provided users with reading services namely reading rooms in Tanzania. Regarding the establishment of the community libraries, Sturges (1994) indicated that they are organized and managed by local organizations such as churches, schools, community groups or individuals and have very close ties to the community. Additionally, they rely on donations from supporters to operate as opposed to funding from government. According to Philip (1980), one of the objectives of community libraries in Africa is to help the rural children and adults maintain knowledge gained from their education.

Rosenberg (1993) identified one of the models of rural community libraries as one that provides reading materials and advice to local citizens; and is supported by the community both financially and administratively. Kempson (1986) identified one of the guidelines for establishing community libraries as community information services which should be rooted in the community and be facilitated by members of the community. Stiwell (1991) suggested that the community librarian should live within the community, be known and trusted by the community members, and be able to identify and meet the community's needs. Thus the librarian will be able to re-package information, offer explanations and recommendations to library users. Some of the objectives of rural libraries as stated by Philip (1980) are to help rural children and adults maintain knowledge gained from their education; and to inspire members of the community to read, use books and enjoy these items for education and recreation.

The role of community libraries in promoting the reading culture

"We Ugandans lack a reading culture" was a lament Stranger-Johannessen (2014, 92) often heard during his research about promoting a reading culture through a rural community library in Uganda. That community library is known as Caezaria Community Library about 35 km east of Kampala capital City in Buikwe district. While some respondents indicated that lack of reading culture is due to the oral tradition, reading has no precedence in Ugandan culture; others stressed the lack of availability of reading materials especially those in a language and with content that make people want to read (Stranger-Johannessen, 2014). He also noted that a community library usually addresses the supply of materials and reading space and makes efforts to promote reading. Regarding the reading culture, Magara and Batambuze (2005) are of the view that it moves beyond a focus on decoding skills; connotes a culture in which literacy is widespread and reading is a daily and life-long activity. Additionally, they believe that schools in Africa constitute an obvious connection to reading since it is claimed that people stop reading when they leave the schools and universities.

Dent and Yannotta, (2005) noted that in Kitengesa Community Library the books were purchased to meet the users' needs, by offering many Ugandan publications and accepting just a few selected foreign book donations. The Kitengesa Community Library is located in Southwestern Uganda. They also added that: "the amount of leisure reading observed in Kitengesa is a sign that a reading culture is developing among the students" Dent and Yannotta (2005, 52).

On the other hand, Rubagumya (2009) and Waruingi (2009) revealed that the story books in English were of a wide variety and covered all levels the majority being published in Africa and portrayed African culture. They further noted that many children's books from overseas end up in the hands of the African children, whose options are limited to stories which may be culturally inappropriate or difficult to relate to and understand. In Tanzania, Sturges and Neill, (1998) noted that the rural reading rooms faced a challenge of acquiring reading materials in Kiswahili, and that there was an increase in English language books of foreign-owned commercial publishers. Sturges and Neil (1998) also expressed concern that there was no reliable way found in Tanzania or elsewhere, to produce enough material in peoples' mother tongue in order to meet their needs.

Throughout Africa, governments have made progress during the last decade towards achieving the goal of Education for All. However, after 3 years of primary education, many children have not learned to read well enough to enjoy reading. Additionally, they are not well equipped for reading to learn at the next level od schooling (Barret 2015; Howie et al, 2008; Pretorius 2014; Tao 2015; UNESCO 2014, USAID & Ugandan School Health and Reading Program 2015). The shortage of appropriate stories for early reading in languages with which children are familiar is one of the key obstacles to learning to read well (Parry, Andema & Tumisiime 2005).

Community libraries' efforts in promoting reading culture in local languages

In his study at the Ceazaria Community Library, Stranger-Johannessen (2014) observed that most textbooks for primary schools were in English; however, there were a few textbooks in Luganda for lower primary. There were also few books in Luganda but they were not on demand, which he believed was due English being the medium of instruction right from Primary One. This was before the government policy of teaching mother tongue from P1 to P3. When Stranger-Johannessen (2014) interviewed a primary school pupil about what he has gained from the Ceazaria Community Library, he revealed that the library has helped him to learn how to read both in English and Luganda.

The Banyole people

Butaleja district is located in South Eastern Uganda bordered by Budaka, Busoga, Bugwere, and Tororo Districts. It is 239 kilometers from Kampala

Capital City and it is 653.1 Square Kilometres. Butaleja District was created by an Act of Parliament and became operational on 1 July 2005(Butaleja district, 2017). Prior to that, the district was known as Bunyole County and was part of Tororo District. The predominant ethnicity in the district 85% are Banyole, a Bantu tribe whose language is called Lunyole. Lunyole has been listed by the Literature, Language and Communication, (formerly the Institute of Languages) Makerere University as among the endangered minority languages in Uganda. According the Uganda Population Census, 2012 the population was 214,600. Nzita and Mbaga (2011, 94-95) revealed that the Banyole are closely related to the Basamia-Bagwe in customs, language and origin. Like the Bagwe, they claim to have originated from the Banyala of Kenya. Their birth, burial and marriage ceremonies are similar to those of the Basamia-Bagwe, though with slight variations (Mbaga and Nzita 2011).

Mother tongue as medium of communication in homes

UNESCO has encouraged mother tongue instruction in primary education since 1953 (UNESCO, 1953). Various scholars also have highlighted the advantages of mother tongue education right from the start that; children are more likely to enroll and succeed in school (Kosonen, 2005); parents are more likely to communicate with teachers and participate in their children's teaching (Benson, 2000); girls and rural children with less exposure to a dominant language stay in school longer and repeat grades less often (Hovens 2002, UNESCO Bangkok 2005); and children in multilingual education tend to develop better thinking skills compared to their monolingual peers (Baileystock, 2001; Cunnings, 2000; King and Mackey 2007). In Uganda, while the government recommended that mother tongue should be used as a medium of instruction in all educational programmes up to P4, English should be taught as a subject; and furthermore from P5 onwards, English should become the medium of instruction (Uganda Government, 1992, 16).

In order to continue the use of and development in the mother tongue Ball (2017) is of the view that intellectually, it helps the learn a new language quicker at school (often English); makes it easier to learn another foreign language and get better academic results in the second language school environment and socially; it helps the child the transition to a new environment by remaining grounded and confident in their own cultural identity; and finally, it maintains closer ties with his/her family.

Findings

The establishment of Busolwe Community Library

The Busolwe Community Library is a product of Lunyole Language Association as revealed by a member of the Association. He further said that this Association was formed in 1964 and its objectives were: to be a unifying factor for the Banyole, to preserve and develop the Lunyole language, to preserve the Lunyole culture that is not detrimental to the Banyole, to promote literacy among the Banyole; and to translate literature from other languages into Lunyole. The Busolwe Community Library was established in 1996. Its aim is, the member added is to improve the community's reading culture in English, Luganda and Lunyole; and to increase its literacy rate. It was observed that the library is located in Busolwe Town Council, and housed in the Lunnyole Language Association building (figure 1 below)

Figure 1: Busolwe Community Library

Source: Field visits, 2017

The Activities and projects carried out by Busolwe Community Library in improving the children's reading culture in Lunyole Language

The activities offered by Lunyole Language Association and Busolwe Community Library include as outlined in the Busolwe Community Library Profile, 2012

African story book Project

This project started in 2012 with support from South African Institute of Distance Education (SAIDE) which aims at promoting the use of the mother tongue. This is a highly successful project. A projector and a laptop are set up in a theatre style for the children to read aloud together especially in the mother tongue. The stories are culturally relevant and engaging for children to read aloud in unison. The project operates primarily on the website that has a large database of African stories in both English and the local languages from around the world, and Lunyole is one of them.

Drop Everything and Read (DEAR)

The aim of Drop Everything and Read (DEAR) day is to promote reading culture and instill a love of reading on a national scale. It aligns with literacy activities happening in the community and this is conducted on 5th March annually from 11:00 am to 11:20 am. In the year 2015, the Busolwe Community Library was among the 75 winners countrywide.

On March 17th 2016, Busolwe Community Library participated in DEAR day. It was organized in 8 locations. More than 1000 students, teachers and the community attended. The library brought various reading materials which included newspapers, magazines, novels and storybooks in Lunyole. These materials were distributed to everybody to read during the allocated time. During the event, one parent said, "I did not know that one could read in Lunyole fluently".

Information Communications Technology (ICT) Training

Busolwe Community Library is the sole library offering computer and Internet services in Butaleja District. During school holidays, the library offers free training sessions to the youths, elderly, business people, women groups and the students. The aim of the training is to increase the computer literacy levels in the community so that they are able to use the computers efficiently and effectively.

Straight talk Club

This is a Student and Youth driven programme which was established in 2012. It aims at empowering students and youths to eradicate challenges such as: high school drop out rate, unemployment, gender inequalities, poor nutrition and health, low self-esteem and idleness. This is accomplished through peer led open discussions, leadership training, career guidance, health sensitization workshops and charity work in the community.

LitClub

The LitClub programme was established in 2013, aiming at developing reading, writing and communication skills amongst primary school children. The

LitClub started with more than 20 pupils from the neighboring Mango Grove Primary School. During each LitClub session students participate in songs, games, read aloud sessions, and writing activities. The library hopes to expand the LitClub to more primary schools in the Busolwe town council; and plans to work closely with primary school teachers to achieve this goal.

Busolwe Women's Groups

In 2009, Busolwe Community Library established the Busolwe Women's Co-operative Group. The aim of the group is to enable women in the community to gain skills in weekly savings, computer classes, handcrafts, and hygiene and sanitation promotion in the members' homes**.** It has championed self-efficacy among women in the community, encouraging them to take greater leadership roles in domestic and public settings. The trained in English and computer literacy, and gained knowledge in First Aid from the medical students at Busolwe Hospital. Many women have used the skills they have gained at the library to take on leadership roles in the community or get employed. One woman in particular used the English she learned to obtain a position at the Busolwe Town Council.

Three women's groups in Busolwe, Busolwe Community Library and the African storybook project generate stories in both Lunyole and English. These stories are then transcribed and uploaded onto the ASP website by the Librarian, for use by children, parents and teachers in the district. In December 2016, Busolwe Community Library started a pilot project whereby selected women were trained in Lunyole language.

Reading Club Project

From 2008 to 2014 the Busolwe Community Library organized a Reading Club programme. Through workshops the librarian, and volunteers from Douglas College, Canada, together with secondary schools in Busolwe Town, participated in friendly reading competition. Reading club activities included debate, subject quiz, drama, and speech and writing contests. The motivated students represented their schools in each activity and prepared for the competitions. Although it started with only two high schools, the Club has eventually expanded to include competitions between six secondary schools. Certificates were awarded to the winners, to schools and the individuals who performed best in writing.

Story Time Project

In order to instill a fascination for storybooks and an appreciation for language in print, Busolwe Community Library partnered with three primary schools to run story time classes for P3 and P4 pupils. By reading out loud in both English and Lunyole, teachers exposed students to book handling, improving their reading comprehension and pronunciation. The Library also partnered with the District Centre Coordinating Tutor, which is the districts authority in teacher training, to follow up these classes and to implement it across a larger network of schools. The Library provides partner schools with books to be used in the story time class.

Challenges faced by Busolwe Community Library in improving the children's reading culture in Lunyole language

Lunyole language is still at its infancy

Tembe and Norton (2008) noted that while Lunyole is the dominant local language in Butaleja District, in the colonial era formal education was first introduced in Luganda and additionally, it is still used in churches, the lower courts and health centres. They also revealed that the orthography for Lunyole was developed only in 2003 through the Lunyole Language Association in partnership with the Summer Institute of Linguistics. Prior to the introduction of the African storybook project (ASb) texts; few literacy materials in Lunyole were available (Tembe and Norton, 2008.

While attending a reading session in the primary school, it was observed that the Lunyole alphabet which was written on the wall of the classroom, is unique in that it does not have x and q; and additionally it uses the long-tailed n, bb, hy and ny.

> According to the teachers who participated in the first research cycle of African Storybook project they expressed the challenges faced in teaching Lunyole (Tembe & Reed, 2016, 6) thus:
>
> > *"The time is not enough for professional development"*
> > *"There is lack of support from the Department of Education of the District"*
> > *"I need more books in Lunyole"*
> > *"Some children are slow learners in mother tongue"*
> > *"It is difficult to help all the children because my class is too big"*
> > *"I have little knowledge of ICT (*use of a laptop*)"*

The librarian expressed the various challenges faced in producing reading materials in Lunyole in collaboration with the African storybook project. These include the process of editing Lunyole stories on the website, the slow internet connectivity and the need for big books for large classes. Their plan is to reach all the 101 primary schools in Butaleja district, however; so far only 7 schools have received the reading materials.

In regards to the Lunyole Bible, a member of Lunyole Language Association revealed that previously, church services were either in English or Luganda. Translating the Bible into Lunyole was started in 2000 and was launched in January 2017 by the Uganda Bible Society at the District headquarters. However only the New Testament was translated reasons being that the Summer Institute of Languages who funded the translation were of the view that the New Testament is more used than the Old Testament. However, the prayer books and hymnbooks are still in English and Luganda.

One of the members of the Lunyole Language Association expressed concern that although people were excited about the Lunyole Bible they said that it is very expensive. The Luganda Bible costs UGX 30,000, the English UGX 15,000 while the Lunyole is GX 10,000. Some Christians requested members of the Association to buy for them the Lunyole Bible and that God will bless them. Most Banyole continue reading the Luganda and English Bibles which have both New and Old Testaments. The majority of the Banyole don't know how to read and write Lunyole.

One members of Lunyole Language Association expressed concern that most members are elderly, although they try to encourage the youths to join the Association; the youths don't want to become members and even like speaking Lunyole language. Their views, the member added, are that there are no financial gains in becoming members and they see no reason for learning Lunyole.

Another member expressed concern that:

> *"From the inception of Lunyole Language Association in 1964, there were about 60 members, however currently we are only 11 active members. Others have lost interest because it is voluntary work"*

When discussing the African Storybook project story *goat, dog and cow,* which has been translated into Lunyole, Tembe & Reed (2014) revealed that several teachers recommended changes to words they considered inappropriate in the context of the story and in two instances politely disagreed with the Lunyole Language Association member's choice of vocabulary for the story. The member agreed with their suggestion and subsequently the translation was revised, a new translation uploaded. Additionally, a member of Lunyole Language Association identified several spelling mistakes and grammar in one of the books in Lunyole for primary schools donated by the government. This is an indication that the language is still at its infancy and therefore errors are bound to occur.

School dropout

The school dropout rate is very high. This was observed while in the head teacher's office, of the selected primary school. The chart indicating the pupil's enrollment for the year 2017 showed that in P1 there were 326 pupils while in P7 they were only 67. A member of Lunyole Language Association gave some reasons for the high drop rate that: some children leave the government schools and go to the private schools where they teach in English only. They don't adhere to the government policy of teaching in mother tongue from P1 to P3. The parents of these children believe that learning Lunyole is a waste of time since children will do their primary leaving examinations in English so they transfer their children to private schools, who they believe perform better in the Primary Leaving Examinations. Other reasons, the member added are that parents send their children to scare birds from rice gardens, early marriages for boys and girls, lack of scholastic materials and the basic requirements at the school.

The member of the Association explained a challenge to pupils who join schools in Butaleja district from another district. For example a pupil from Tororo district who studied in Jopadhola joined a school in Butaleja in P3 will be confused as he/she does not understand any word in Lunyole. Additionally, there is no assessment test for Lunyole language in schools; therefore pupils do not revise it as they do for other subjects.

Limited number of books in Lunyole

There are a limited number of books in Lunyole. A member of the Lunyole Language Association revealed that in the selected primary, the 326 pupils in P1 have 55 copies of a title of a book, which is a ratio of 1 book per 7 pupils. These books are donated by the Government.

Figure 3: A reading session of P1 in a selected primary school

Source: Field visit, 2017

While attending a reading session of a selected primary school (Figure 3 above) it was observed that a book was shared among 6 children on a desk. There was a struggle when each pupil wanted to hold the book. It was also observed that since the books were small in size, the teacher had to move among the pupils, showing them pictures in the book (Figure 4 below). If the teacher had used the big books like those published by the African storybook project, it would have made it easier for the pupils to see from where they sat and she could have shown them from the in front of the classroom. The African storybook project books are big and are spine bound so they can be easily folded.

Figure 4: A teacher during the reading session of Lunyole

Lack of a reading culture

The librarian expressed concern about lack of areading culture in the community and high level of illiteracy. Very few members of the community come to the library to read. The few who come mostly read only Newspapers (New Vision) and particularly sports. Although the library conducts free computer training but few turn up for the classes. There is a tendency for the community to think that the library is only for the elites. While at the Busolwe Community Library, it was observed there is lack of space for users, up to date reading materials and limited computers.

Lack of funding

The funding for Busolwe Community Library depends mainly on donors. The library hires motorcycle taxi (boda boda) to deliver the story books to the primary schools and the community, which is rather expensive. The furthest primary school which the library has to deliver the books and is participating in the Africa story book project is 15 km away from Busolwe Community Library.

District Language Board

A member of the Lunyole Language Association revealed that Butaleja district does not have a District Language Board and yet it is a government policy that every district should have a district Language Board. The objectives of a district Language Board are to: promote use of local languages in primary schools and improve literacy in the districts; improve on the flow of information on government programmes, national laws and policies by reproducing materials on the local language and collaborating with the book industry. The District Language Board is composed of several stakeholders namely, the district authorities, religious and cultural leaders, schools and children (District Language Board, 2017).

Limited Staff

The librarian lamented that she is the only member of staff working at Busolwe Community Library, so when she goes to attend conferences, workshops and outreach activities, the library closes. However, she acknowledged the partnership the library has with Douglas College, Canada who, through the Uganda Community Libraries Association, send two interns to the library for six months, every year. They help her with the various activities and programmes of the library.

Achievements of Busolwe Community Library/Lunyole Language Association in improving the children's reading culture in Lunyole language

Translation stories into Lunyole language

With assistance from the Summer Institute of Languages in USA, one member of Lunyole Language Association said that the association was able to translate the New Testament of the Bible from Luganda to Lunyole language which was launched in 2017. They managed to develop and publish the Lunyole orthography, spelling guide and dictionary. In partnership with the African Storybook Project, the member proudly revealed that they were able to translate, create 140 stories in Lunyole and upload them on the Africa storybook project website, the highest in Uganda (Gulere (2017), (Table1 below)

Table 1: Number of stories of some selected languages in Uganda uploaded on the Africa storybook project website by 30 June 2017

No.	**Language**	**No. of titles**	No.	**Language**	**No. of titles**
1.	Acholi	3	**10**	Lusoga	56
2.	Ateso	36	**11**	Madi	2
3.	Kumam	9	**12**	Karimojong	1
4.	Langi	3	**13**	Lunyala	1

5.	Lugbarati	86	**14**	Rufumbira	7
6.	Lugwere	11	**15.**	Runyankore	8
7.	Luganda	117	**16.**	Runyoro	5
8.	Lumasaba	77	**17.**	Rutooro	3
9.	**Lunyole**	**140**	**18**	Kuksabiny	10

Training teachers and children in learning to read and write in Lunyole language

In their findings about teaching and learning Lunyole in primary schools Tembe & Reed, (2016, 6) revealed some of the experiences of teachers in the first research cycle that they could read and write Lunyole. They also noted that the children were participating actively in my lessons.

In the letter by a head teacher of the selected primary school to the chairperson, Lunyole Language Association about the report on literacy in P1-P3 ASb, he wrote:

> "*The concerned teachers put the books into effective use and have reported that they helped pupils pronounce, write and comprehend the vocabulary within the books. The teachers have appreciated the books and pledged to continue to use them to enhance literacy in the school".*

In order to improve the children's reading culture in Lunyole, the librarian of Busolwe Community Library revealed that parents are encouraged to speak Lunyole to their children at home. She also explained that pupils from P1 to P3 are taught in Lunyole in all the subjects namely, Mathematics, Social studies and Science; however English is taught as a subject. The librarian also added that in collaboration with African storybook project, she together with the members of the Lunyole Language Association translate stories which are given to primary schools either in hard copies or soft copies using a projector. Sometimes pupils with their teachers come to the library and borrow the books or the books are taken to the schools using a boda boda. The librarian and members of Lunyole Language Assocation also organize workshops for P1 and P3 teachers on how to teach in Lunyole.

Regarding the story creation and translations a member of Lunyole Language Association explained:

> *With the assistance of the librarian, organize workshops in the community and by the end of the workshop, about 10 stories are recorded and transcribed. Other stories are written by the community and we edit them. Pictures are downloaded from the ASb website. If there is no picture matching the story, we draw it*

ourselves or someone draws it for us. Stories should be those which help children to enjoy and to learn, so that they would read them again and again. After sometime, children bring stories which were told by their mothers which are edited and uploaded to the African storybook project website.

The role of the women's groups role in creating stories in Lunyole

Women's groups also participate in creating children's stories as revealed by the librarian. She explained that the women write stories either in Lunyole, Luganda or English. The stories written in English are translated into Lunyole. The librarian uses a video camera to capture the stories of those women who cannot write. When their stories have been accepted, uploaded and published, they are informed. They are very pleased when they see these books with their names as authors. Children also create stories in English or Lunyole.

Mango Grove Junior School

The Mango Grove Junior School was established in 2010, revealed the former librarian of Busolwe Community Library and currently the director of the School. It started with children both pre-school and school going age. They came to the library to read, write and draw pictures in the afternoon sessions. This activity was carried out by the librarian and two volunteers from the University of British Columbia, Canada; who created conducive environment for the children. The parents requested the former librarian to establishment a nursery school. They pledged to pay for a full time education since their children liked to come to the library for reading sessions. Later on, the former librarian said that writing and reading sessions for adult classes were also introduced. A formal school was established at the library premises.

The following year, 2011, a proposal was developed by the former librarian together with the support of the volunteers from Canada. The key issues that were observed to be addressed, the former librarian said was to put emphasis into reading and writing as this was noted to be a key problem in the area; and to introduce feeding the children at the school to reduce drop out as a result of hunger.

Why the name Mango Grove Junior School? This name, the former librarian explained, was the name given as a result of one of the volunteer's mother, who runs a school called Cedar Grove Kindergarten, the common tree in Canada. Her mother willingly pledged to give some start up for the school. Since there is a mango tree near the Busolwe Community Library, they decided to name the school Mango Grove Junior School. In 2012 the school with 150 children, two classes of nursery and five classes of primary section. The school conducted classes from 7:a.m. to 4:30 p.m. By 2016 the school had 400 pupils and so it moved to another location. In this school, the children are able to read and write in Lunyole and English. It is one of the few private schools in Butaleja district which teach Lunyole from P1-P3.

Future plans, the former librarian and currently the director of the school revealed that they hope to: build better classroom blocks conducive enough for better learning environment; look out for partnerships to better development and learning; start income generating activities for the school to increase on the income and finance of the school; look out for support for the vulnerable and disadvantaged children at school for support in order to enhance their learning.

Strategies for improvement of children's reading culture in Lunyole language

Reading the Lunyole Bible

We hope to set up workshops and bible study groups to teach the Christians how to read the Lunyole language revealed a member of Lunyole Language Association, with emphasis on spelling and pronunciation especially in the Bible, since pronunciation can change meanings. This, it is hoped will ensure that the message in the Bible is understood. Additionally, the association plans to organize Bible reading competition.

The youth

To encourage the youth who are the leaders of tomorrow to join the Lunyole Language Association, and learn Lunyole even though they don't like speaking Lunyole.. Establish drama groups to make plays and songs in Lunyole Language. Members also hope to establish an internet café which it is hoped will attract the youth to come to the library.

Advocacy

The member of the Lunyole Language Association revealed that they plan to meet the Butaleja District Administration to convince them to own the Africa Storybook project; and also to partner with the district education office so that they contribute to the workshops. The Association will continue working with stakeholders such as churches, mosques, in the campaign of changing the attitude of the Banyole about learning Lunyole language. They hope to produce as many children's books as possible. They plan to encourage the district administration to establish the District Language Board which would give the Association the authority to do this work by getting the support from the local government.

Discussion

Busolwe Community Library was established by the Lunyole Language Association in 1996 whose aim is to improve the reading culture in English, Luganda and Lunyole. Additionally, there was no library in the district; and there was a need to have a place for the community to come and read the books. As a result, efforts have been made to improve the reading culture in Lunyole of the children, youths, women and the community as a whole, through various activities and projects. Some of the challenges as has been noted are that Lunyole still at its infancy and is one of the minority languages spoken by few people in Uganda. The youths who are the leaders of tomorrow are not interested in learning the language. Furthermore, the Lunyole dictionary and the Bible in the New Testament are the only books which can be read by the older people, otherwise most books in Lunyole are for the children. They are published by the African Storybook project and the Government of Uganda. The youth should be targeted by coming up with music, dance, drama and, films music in Lunyole, so that, they are attracted to learn the language.

References

Baileystock, E. (2001) Bilingualism in development languages: language, literacy and cognition. Cambridge: Cambridge University Press.

Ball, J. (2014) *Children learn better in their mother tongue advancing research on mother tongue –based multilingual education* www.globalpartnership.org [accessed 16 August 2017]

Barrett, A. (2015) '*Measuring literacy post-2015: some social justice issues'*. In H. McIlwraith (ed.), Language rich Africa Policy dialogue: the Cape Town language and development conference, looking beyond 2015. London: British Council.

Bassey, M. (1999) *Case study research in educational setting*, Buckingham: Open University Press.

Benson, (2002) Real and potential benefits of bilingual programs in developing countries International Journal of Bilingual Education and bilingualism 5 (9), pp. 300-317

Busolwe Community Library Profile 2012

Butaleja district. www.butaleja.go.ug [accessed 3 May 2017]

Cummins, J. (2000) Language, power and pedagogy. Clevedon, UK: Multilingual Matters

Darvin, R. & Norton, B. (2015) 'Identity and a model of investment and applied linguistics' *Annual review of Applied Linguistics 35(2015), pp. 36-56* http://dx.dio.org [accessed 17 August 2017]

Dent, V.F. &Yannotta, L. (2005) A rural community library in Africa: a study of its use and users. *Libri* 55 (1), pp.39-55

District Language Boards http://www.ugandaradionetwork.com [Accessed 30 August 2017]

Gulere (2017) ASb project presentation at the Uganda Community Libraries Association Annual Conference held at Kawempe Youth Centre, Kampala, 28-30 June 2017

Hoven, M. (2002) Bilingual education in West Africa: Does it work? *International Journal of Bilingual Education and Bilingualism* 15 (5), pp. 249-266

Howie, S. et al, (2008) PIRLS 2006 Summary report. *South African Children's Reading Achievement Centre for Evaluation and Assessment*. Pretoria: University of Pretoria

Kempson, E. (1986) Information and self-reliance and self-determination: the role of community information services, *IFLA Journal*, 12 (3), pp.182-191

King, K. & Mackey, A. (2007) the bilingual edge: why, what and how to teach your child a second language. New York: Collins.

Kosonen, K. (2005) *Education in local languages: policy and practice in South East Asia*. First languages first: community based programs for minority languages context in Asia. Bangkok: UNESCO, Bangkok.

Magara, E. & Batambuze C. (2005) Towards a reading culture for Uganda. *African Journal of Library, Archives and Information Science* 15 (1) pp. 35-42

Mosert, B.J. (1998) Community libraries, the concept and its applications – with particular reference to a south African community library system. The international Information & Library Review 30 (1) pp. 71-85

Norton, B. (2013) *Identity and language learning: extending the conversation* 2nd ed. Bristol: Multilingual Matters

Nzita & Mbaga Eds. (2011) *Peoples and cultures of Uganda*. 4th ed. Kampala: Fountain Publishers, pp. 94-95

Parry, K. Andema, S. & Tumusiime, L. (2005) *Literacy of all in Africa: Teaching reading in African schools*. Kampala: Fountain Publishers.

Philip, A. (1980) Organization and management of rural (village) libraries, *Maktaba*, 7 (2), pp.45-50

Pretorius, E. (2014) Supporting transition or playing catch-up in grade 4? Implications in standards for education and training, *Perspectives in Education* 32 (1) pp. 51-76.

Priestly, M. Biesta, G. & Robinson, S. (2012) Teachers as agents change: an exploration of the concept of teacher agency Working paper No.1, *Teacher Agency and curriculum change*. Sterling: University of Sterling.

Rosenberg, D. (1993) Rural community resource centres: a sustainable option for Africa?, *Information Development*, 9 (1/2), pp29-35

Rubagumya C.M. (2009) The politics of language and literacy in Africa: the experience of Tanzania. *Reading in Africa beyond the School*, edited by Kate Parry. Kampala, Uganda: Fountain Publishers: p.11-23.

Stiwell, C. (1991) Community libraries: A viable alternative to the public library in South Africa? *Progressive Librarian* 4 (Winter), pp17-27

Stranger-Johannessen, Espen (2014) promoting a reading culture through a rural community library in Uganda. *IFLA Journal*, 40(2) pp. 92-101.

Sturges, P. (1994) Using grey literature in informal information services in Africa, *Journal of Documentation,* 50, pp. 273-290

Sturges, P. & Neill, R. (1998), *The quiet struggle: information and libraries for the people of Africa*, 2nd ed. London: Mansell Publishing

Tao, S. (2015) Using the capability approach to improve the efficacy of teacher training. Cambridge: Cambridge Education

Tembe, J. & Norton, B. (2008) Promoting local languages in Uganda primary schools: the community as a stakeholder. *The Canadian Modern Language Review* 65 (1) pp. 33-60.

Tembe, J. & Reed, Y. (2016) Languaging in and about Lunyole: African Storybook materials as a catalyst for re-imagining literacy teaching and learning in two Ugandan Primary Schools. *Reading &Writing – Journal of the Reading Association of South Africa* 7 (2) pp. 1-8

Uganda *Government.* White Paper on the Education Policy Review Commission Report (1992, *Education for National Integration and Development*. Kampala: Uganda Printers and Publishers Corporation.

UNESCO (1953) The use of vernacular languages in education. Monographs of Foundations of Education, no. 8. Bangkok: UNESCO.

UNESCO Bangkok (2005) *Advocacy brie on mother tongue-based teaching and education for girls*. Bangkok: UNESCO.

USAID/Uganda School Health and Reading Program (2015) Cluster 3 baseline report, June 2015 Are East Africans reading? *Reading in Africa, beyond the School*, edited by Kate Parry. Kampala: Fountain Publishers pp. 29-34.

Waruingi, G. (2009) Book donations: what are the East Africans reading? *Reading in Africa beyond the school,* Kate Parry (Ed.) Kampala: Fountain Publishers

Welch, T. (2012) *Any mother tongue literacy isn't working: policy, pedagogy, parents and publishing;* Address to the annual general meeting of the Witwatersrand Council of Education with School of Education, Johannesburg, October, 2012.

Welch, T. et al (2015). *The African story book project: an interim report*. In H. Mcllwraith (ed.) Language rich Africa policy dialogue: the Cape Town language and development conference looking beyond 2015, London: The British Council.

AN EVALUATION OF THE COMMUNITY LIBRARY INFRASTRUCTURE PROGRAMME: METROPOLITAN MUNICIPALITY EXPERIENCE

Kepi Madumo
Executive Director
Community Development
City of Johannesburg
South Africa

Abstract

The evaluation of the City of Ekurhuleni Metropolitan Municipality (EMM) community library infrastructure programme is a pioneer project supporting the institutionalisation of programme evaluations in the municipality. Except for the community satisfaction surveys focusing on the perceptions held by community members about the services provided by EMM conducted annually, evaluation of community library infrastructure programme is the first sizeable formal appraisal of the municipality's development interventions aimed at taking lessons, gauging the worth of the intervention and collecting valuable information necessary to guide the improvement of a development programme. Using a qualitative method of inquiry, the study used two methods of data collection which were document thematic analysis and face to face interviews with library staff, schools, early childhood centres (ECD) and ward councillors. The report presents the findings of the evaluation undertaken on the Community Library Infrastructure Programme, in line with the thematic areas of focus and identifies the challenges observed. The report concludes and highlights the areas of improvement based on the findings made. In the main, the study will benefit librarians, policy makers in local government and academia to understand the importance of performance monitoring and evaluation as management tool to improve performance and achieve development goals geared towards change.

Keywords: *community library, infrastructure programme, performance evaluation, Metropolitan municipality.*

Introduction

According to Maepa (2013,70) performance monitoring and evaluation (PME) is a powerful public management tool that organisations and governments can use to improve the way they conduct their business in order to achieve results. As part of the wider government reforms, and growing pressures and demands for service delivery the South African government established the Department of Performance Monitoring and Evaluation (PME) in the Office of the Presidency in 2009. In his foreword, the late Minister of Performance Monitoring and Evaluation Mr. Collins Chabane provides the principles and summary of what PME entails.

> *'If we are to improve our performance we have to reflect on what we are doing, and what we are achieving against what we set out to achieve and why deviations are occurring or unexpected results occurring. We cannot advance without making mistakes on the way, but we must evaluate and learn from our success, and our mistakes. Without this we cannot improve'* (National Policy Evaluation Framework, 2012/13).

Background and Rationale

There are 45 community libraries across Ekurhuleni Community. Over the past five years (2011-2016), there was a concerted effort to build or refurbish libraries in economically disadvantaged communities with the main purpose of providing access to information, creating a culture of reading and access to services such as photocopying, faxing, internet access etc. The utilisation of libraries across EMM communities differed by socio-economic status and geographic classification of the area. Libraries in townships and historically disadvantaged areas were mainly used for educational and business support services rather than recreational reading or viewing resources. Although libraries in suburbs were also used for educational and business support services, these libraries had higher circulation rates for recreational reading. The Community Library Infrastructure Programme as a unit of analysis was developed in response to the policy priorities of government applicable in local government metropolitan municipalities. In particular, it responds to the policy priority that seeks to improve and broaden access to local public services. It further supports the efforts geared towards realising the national outcome "improved quality of basic education". In order to achieve these development objectives, EMM invested on a programme that develops community libraries infrastructure aimed at invigorating libraries as centres of wider community learning and development wherein learning based activities and services are brought closer to the communities. In the main the programme seeks to achieve; a transformed and equitable library information service delivered to all communities, improved library infrastructure and increased staff capacity and an improved culture of reading. In pursuit of these objectives, the programme set out and prioritised the following outputs; refurbishment and expansion of existing libraries, building of new libraries, the appointment of staff to support the operationalization of the library facilities, acquisition of library material, the upgrading of information and communication technology (ICT) infrastructure and the provision of ICT services to the communities it services

Purpose for the evaluation

The purpose of the evaluation was to evaluate the outputs and short-term outcomes, with a focus on effectiveness, efficiency and relevance. To make recommendations for better functioning of the Community Library Infrastructure Programme. Lastly to determine if there were any factors that negatively impacted on the roll out of the Community Library Infrastructure Programme and the achievement of its outputs or outcomes.

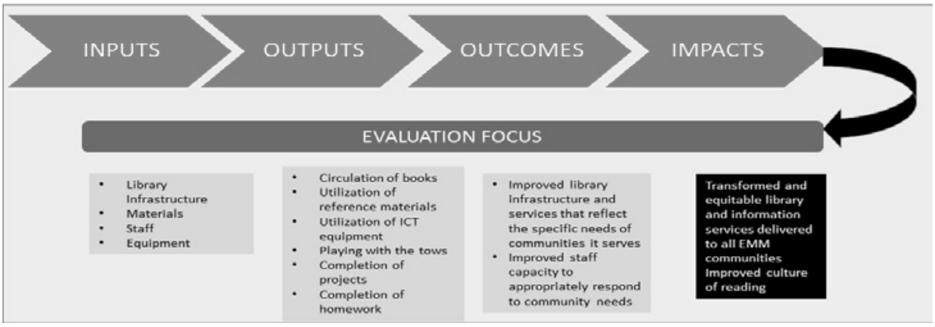
Related literature

The concept of performance monitoring and evaluation (PME) entered the library profession in the nineteenth century (Ward, 1971: 52). Literature points out that the approach used to evaluate public library services focused mainly on surveys based on an analysis of library statistics commissioned by library authorities (De Jager and Nassimbeni, 2005). Though the PME technique used in the 21st century is more refined and the emphasis is more on results or outcome based context (UN Monitoring and Evaluation Handbook, 2002).

Theoretical Framework

The Logic Model assisted with a schematic representation of the interventions that were implemented as part of the Community Library Infrastructure Programme. This model was used as the framework to answer questions about how the programme operated, document the activities undertaken in the delivery of the interventions, whether the interventions planned were undertaken, whether any observable changes were noted and could be attributed to the Community Library Infrastructure Programme.

Figuer 1: The Logical Model



Methodology

For the purpose of the evaluation the design supporting the predictive method was the exploratory evaluation method most appropriate for implementation (process) evaluation. It focused on the link between planned programme activities, the outputs and the direct outcomes. The evaluators used the exploratory study design to gain familiarity with the programme, increased understanding of the interventions, and assist with the formulation of better evaluation questions and approaches. This process involved the following methods:

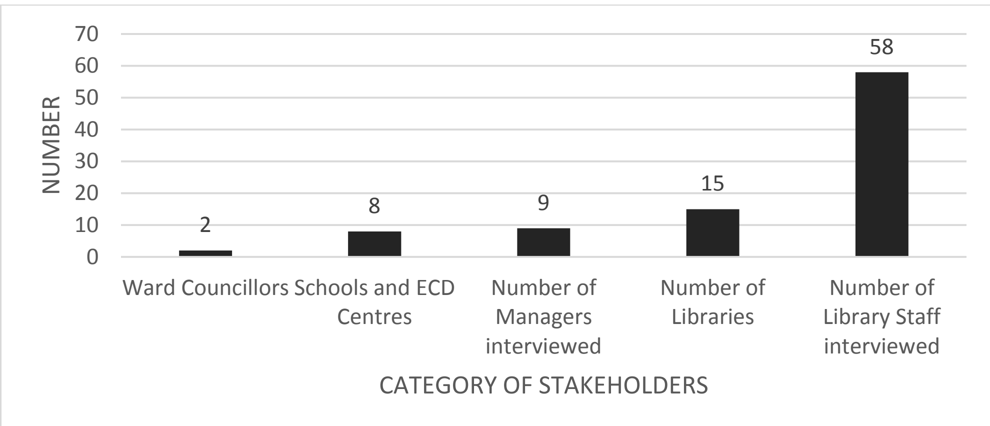
- Review programme documentation. What was already known about Community Library Infrastructure Programme? For example, what activities were successful, with whom, and under what circumstances?
- Review existing data or information. What did the quarterly reporting data say about Community Library Infrastructure Programme
- Sample. This involved the sampling of libraries in accordance with the Community Library Infrastructure Programme activities received, its delivery method, target groups, the duration of the programme and level of activities. To be dealt in details below.
- Interviews with individuals with different viewpoints, or with key informants from the stakeholder group. It involved interviews with a cross-section of people/programme/groups from the target population. This allowed the evaluator to see the activities

undertaken and how these activities were perceived through different lenses, as well as generate information which will allow for more informed conclusions and recommendations

Sampling

A multi-stage sampling approach was used to draw a sample. The primary sampling unit was the library staff, the secondary sampling unit was the infrastructure intervention, and the tertiary sampling unit was regional managers selected for the evaluation. The sampling frame was developed using purposive sampling methodology using set criteria, i.e. the sample was drawn from the libraries where the infrastructure intervention were implemented, the programme, the reach and the activities implemented. Each infrastructure intervention provided were categorized. Once the reference population was mapped a list of criteria was developed to select the sample for the implementation evaluation which included all libraries with infrastructure interventions during the period June 2011 to 2015 across all regions in the metro; all infrastructure interventions during the period June 2011 to March 2015.

Figure 2: Distribution of evaluation participants



Data collection methods

It was imperative to determine the tools required for data collection. Evaluation questions give direction to an evaluation. After the review of documents including, programme documentation, strategic plan, and the quarterly reports a set of questions supporting the evaluation design were developed. The data collection methods utilized during the implementation (process) evaluation were:

(i) ***Document thematic analysis*** (sometimes referred to as *desk reviews*). Analysis of documents in order to extract themes/ issues to be evaluated. This included all types of documents such as monthly, quarterly and annual reports, minutes of meetings, intervention materials e.g. training materials, support materials – print, audio-visual etc. and research reports. The analysis included an extraction of general trends in respect of the Community Library Infrastructure Programme

(ii) ***Face-to-face interviews*** were conducted with Regional Sport, Recreation, Arts and Culture (SRAC) staff, Library Staff within the respective libraries, schools, ECD centres and ward councillors. Face to face interview were advantageous as it facilitated an interaction between the interview and the interviewee as well as enabled the interview to probe on issues that needed further clarification. An important element of data collection was triangulation. Triangulation is a strategy for using diverse datasets to develop timely recommendations for programme evaluation and decision-making. Triangulation is broadly defined as "*synthesis and integration of data from multiple sources through collection, examination, comparison and interpretation*". By first gathering and then comparing multiple datasets to each other, triangulation helped to counteract threats to validity in each. In this evaluation data sources used for triangulation, was perspectives solicited from different groups e.g. library staff, the regional managers, communities and the review of documents

Evaluation findings

The overall findings of the study reports the general trends observed and recorded during interviews organised in accordance with the OECD criteria, i.e., measuring the relevance, efficiency and effectiveness (Chianca, 2008 and Austrian Development Agency, 2009). The key elements reviewed were: Physical Infrastructure such as building, painting, repairs, maintenance, replacement of carpets, shelves; ICT Infrastructure (Fax Machine, Computers, and Photocopiers); Materials and Books (Books, magazines, reference, fiction and non-fiction); Toy library; Mobile library and Staff. The libraries across Ekurhuleni stock books and other resources such as newspapers, magazines, toys, learning materials, study guides etc. The material in libraries is not just filling space, but is circulated widely within the community. The "up-to-datedness" of the books is relative to the users and their varied needs, as well as the categories they require. Funds were put aside to buy best-sellers for fiction lovers, and African-language books were bought to contribute to the promotion of African languages. The libraries sampled for this evaluation all had a user-centred approach. Other programmes on offer at the different libraries included improved and formalised business information services, government information services, reference services, and education and toy library services. With the information explosion and wide availability of information resources, the EMM libraries could not fulfil all users' needs, as funds were limited. Ekurhuleni Metropolitan Municipality is, however, confident that it caters sufficiently to the majority of library users. Library facilities included buildings, auditoriums and study halls. Wheelchair access was reported to be in 24 libraries around Ekurhuleni.

Infrastructure

Since the July 2011 to June 2016, 10 new libraries were built and 15 libraries were subjected to major refurbishments. The increased number of newly built, expanded and refurbished libraries made libraries more accessible to communities, in that the physical proximity to the library was much closer to the community, the library was quite with available space with good lighting for those who wanted to study.

The newly constructed libraries and those refurbished were designed in a way to support a quality user experience. Major changes to settings have been achieved with libraries refurbished to deliver modern buildings, with flexible spaces. Flexible design included shelving on wheels so that the main public space can be re-configured to support events and activities that would not have been possible with fixed shelving. In a number of the newly constructed or refurbished libraries there has been an increase in public space as a result of extension or re-configuration and reduction of back office and staff rooms. New frontages, layouts, signage have been introduced to make the buildings more accessible and welcoming. Improved layout and signage and zoned areas for different uses and user groups has been a key feature. There has been a significant increase in space for children and teenagers, including an increase in stock availability and dedicated ICT facilities. Zoned areas for children have been integrated into seven of the libraries sampled. The most prevalent changes to library settings has been seen in the design of spaces to support formal and informal learning and rooms to support a broad range of community activities. In designing community libraries authorities have created improved spaces for study, increased ICT for learning throughout the library and included dedicated learning sites to support studying. Rooms for community activities include small meeting rooms, and hall-like rooms. The external aspect of the community libraries have been designed to make both the building itself and the activities taking place in the library more visible. The **design and layout** of the space itself also influenced the way in which libraries were used by their communities. A few of the community libraries designed its study rooms with a separate entrance from the main library so that it could be accessed outside of library and in some instances outside the opening hours.

Whilst it was impractical to estimate intangible benefits with an acceptable degree of confidence, consideration of the following intangibles underlined their potential significance. In the event that community libraries did not exist there would be astronomical expenditure on government school libraries and this would exclude members of the community that are not school going. Other areas of economic activity attributable to community libraries include the travelling costs incurred by library users visiting libraries; the costs of maintaining Internet accounts and related IT expenditures resulting from exposure to library provided services; and the change in economic activity resulting from the redistribution of funds saved by borrowing from the library in lieu of purchase. Community libraries thus contribute to economic wellbeing in diverse ways and in so doing assist individuals to become more independent. As indicated above, community libraries contributed to economic wellbeing in diverse ways and in so doing make individuals more independent. Although the link to economic wellbeing may seem tenuous for some of the nominated contributions, when viewed through the lens of creating the pre-conditions and capability to achieve greater prosperity and financial security, the linkages gain clarity.

Consistent with the perceptions outlined above, all the Library Managers were found to support the view that community libraries generated value in excess of their annual expenditure. Notwithstanding their strong belief that community libraries were economically beneficial, no library service has yet incorporated a formal estimate of their library's value into their planning processes. It was evident from Library Managers' comments that the lack of a recognised estimating methodology is a barrier to such inclusions and it is hoped that insights gained through this evaluation will encourage library services to incorporate such measures in their formal planning processes. Although the infrastructure of the delivery of community libraries has been effective and efficient there were some challenges observed during the evaluation. The continuous leaking of roofs resulted in damaged furniture and books. Cracks in the walls and in some instances the walls were so badly damaged that it could collapse. Lighting – in some of the libraries the lighting was very poor making studying for students an almost impossible tasks. There was inadequate and in some instances no maintenance of libraries. Overall, the physical infrastructure of the libraries were very poorly kept.

Community Library service

The community library offers a wide range of services. These included books and materials for recreational reading; reference books, study materials and guides for homework for learners at primary, secondary and tertiary levels; access to newspapers and magazines documenting the local news; ICT facilities which enables easy access to information, printing of documents and receiving and sending documents electronically. An example commonly cited was the drafting, completing and sending an application for a job with a very short space of time. Study areas – all of the community libraries had set –aside or dedicated study areas. These study areas were equipped with desks, chairs with majority of the libraries having adequate lighting and ventilation for study purposes. Core library services improved across the programme in response to needs of the community. Book stocks have been refreshed in all libraries with some of the community libraries sampled replacing large parts of the stock. Increased and improved information resources are a feature of many of the libraries sampled for the evaluation, with many libraries having developed the information resources in the community libraries in response to user needs. The change in settings and increased ICT facilities has enabled all libraries to provide improved spaces for study for all groups. There was an increase in school children using the library for homework, establishment of reading groups and evidence of new services developed in response to the changing landscape. The investment in the community libraries provided a catalyst for staff to work in a different way and establish mechanisms for engaging communities. For example in three of the sampled libraries the formation of reference group and the friends of the library provided a focus through which community stakeholders shape and influence services delivered within the library building.

The library was valued as a place that was a safe, harmonious, welcoming and inclusive environment was most often quoted as contribution by the library staff. Among the supporting comments, libraries promoted acceptance and understanding of others by acting as neutral meeting places accessible to the whole community. The availability of community library collections was seen to address the disadvantaged by ensuring free and equitable access to collections for all community members; addressed the needs of specific target groups; contributed to developing, maintaining and improving literacy levels; and included book collections in the indigenous languages that promoted the mother tongue. Library programmes and services were seen as complementing collections and enabling library services to specifically target and contribute to social wellbeing. The examples demonstrating the above contributed to positive community relationships and community harmony through multicultural Story-times and by extending its reach through programmes such as Story-time in the primary schools and early childhood development facilities. Also supported Book Clubs and Reading Groups, thereby created social interaction among people with common interests who may never otherwise met; assisted adults with minimal literacy skills; assisted the community to develop reading and writing skills through the English Literacy programs; encouraged parents to commit to early literacy development for their children through the ECD and born-to-read programmes. Community libraries' were considered important as it is a place to meet, to study with others. Meeting the needs of the aged and members with a disability, who were unable to visit the library, were supported through outreach programmes and setting up depots, supported primary and secondary children's education through providing the support required in doing research for projects and assignments. Through adult education programme, a large majority of the participants learnt how to read including development in English language skills. In terms of activity, therefore, it is clear that libraries have continued to deliver a great and growing range of services through the community library, and that just as important as the services are the setting and the people and processes that have taken place in this programme.

ICT

The reliance on information and communication technologies (ICTs) has dramatically changed the manner in which services were being rendered to the users in the community libraries sampled across Ekurhuleni. For instance, changes were noted by the evaluation in the manner in which library services, such as circulation, interlibrary loan, reference and information services, were rendered. Provision and implementation of ICT by community libraries has led to the access of internet services. This access enabled users to, among other things, apply for jobs online, read newspapers online and access online resources such as dissertations, to enhance their personal growth and advance their professional careers. The presence of computers and printers in community libraries allowed users to type letters, assignments and Curriculum Vitae (CVs) and print them at much reasonable prices. Different types of ICTs facilities were available in community libraries for use by members of the public. Across

Ekurhuleni ICTs availability in community libraries for members of the public included computers, computers with Internet, CD-ROMs, audiocassettes, video cassettes, photocopies, faxes and printers.

Web based resources: These are sources that are now available electronically or in digital form. The following were some of the types of library materials available electronically or in digital form in the community libraries: journals, books, reference materials etc. The advantage of these resources was that one could access these from anywhere provided the user had access to the Internet which was provided at the community library. Despite the above the situation with the ICT infrastructure has deteriorated. All libraries sampled raised serious challenges with the ICT, such as response times to ICT queries was reported to be very slow and often different technicians gave different responses to the same issue. The number of computers in all the libraries sampled did not meet the demand. For many, the library was the only place where a person could access the internet. The demand on a limited number of computers resulted in a number of technical problems with the computers.

Books and materials

The key responsibility of the Municipal Library Service is the provision of library material to community libraries across Ekurhuleni. This is done through a centralised system of selection, acquisition and processing of materials that are then distributed to community libraries. The main focus of the acquisition and selection were; review, selection and acquisition of library material. Collection development underpinning these tasks were the necessary and vital activities of budgetary control, record-keeping and the creation and maintenance of the on-line bibliographic database, which reflects all decisions made. Although book selection is covered here, the central system was also responsible for audio-visual material, that is, CDs and DVDs. The selection and acquisition system was distinguished by the selection of books based on reviews of actual books - copies need to be seen and handled to determine if they are suitable for community library purposes and to get a real idea of the contents that cannot be described with 100% accuracy by a review in a journal or a description in a catalogue, no matter how comprehensive. There were a variety of books purchased during the period under review. These included books for Early Childhood Development programmes born to read and books for children. Books were purchased for reading competitions such as the Battle of the Books, spelling Bee and Story Skirmish reading programmes. A number of reference books were purchased – particularly reference books relating to professional work such as legal and medical reference material.

A large percentage of the allocation for books was spent on study material and study guides. The main reason for this was to create access to reference materials and study guides for students living in impoverished areas, i.e.

informal settlements and townships. Many of the indigenous books were used for school projects where learners learn about different cultures and languages through reading indigenous materials. Community libraries played a significant role to bring indigenous material to communities. Some of the librarians indicated that if users go into the library and are confronted with only English and Afrikaans language materials, some may feel that the library does not accurately represent the current cultural reality. The librarians as a collective indicated that the community library should be a place where no ethnic group feels disadvantaged. It should be a public place that promotes interaction among members of a diverse community and a place in which one can access information in the language of one's choice.

The reference and non-fiction material were most widely used by learners in the community. The community library was seen as an extension of the school. Both teachers and learners used the community library for projects, for additional teaching and learning material and learners used the library for the available school based reference material. Primary and the secondary schools users stated that they would not be able to pass and achieve better performance if they did not go to the library and spend time doing projects and doing their homework. Teachers have forged a relationship with the librarians who willingly assist the teachers to package information for projects that can be easily accessed by learners. Both learners and teachers remarked that the availability of these materials made the teaching and learning easier. Despite the limited collection of reference materials for university studies, the materials that were available were extensively utilised for study purposes. A librarian who was at a community library for many years stated that she observed the success of many students who used the library. She said *"if it was not for this library our community would not have had so many students qualifying and becoming successful professionals"*. Improved culture of reading in communities was also strongly linked to community library collections, which addressed free and equitable access to collections for all community members. When considering the above contributions, it was important not to over-emphasise the importance of informational and educational collections at the expense of the more recreational collections such as fiction. The contribution of library collections for *"improved culture of reading"* in communities was highly dependent on the libraries' ability to satisfy users' demand, hence the practice of maintaining diverse collections with recreational and informational components. Indeed, the relative popularity of fiction materials may be interpreted as indicating that such collections were at least of equal importance in contributing to social wellbeing. Library programmes and services were naturally seen as complementing core services and enabling library services to specifically target and contribute to "*Improved culture of reading"*. Once again, the role of programmes were characterised by the diversity of groups targeted as can be seen from the following examples, contributing to an "*Improved culture of reading"* through multicultural Story times. Extending the reach of Story time by taking it off-site. Majority of the Libraries experience of Story time in the ECD facility or at a primary school. This attracted parents of nearby units, including many non-English speaking grandparents and exposing them and their families not only to Story time, but to the community library generally. The outreach programme implemented through the mobile library services delivered through mobile busses introduced the service to areas known to have no library building in particular informal settlements. The programmes commented on above were only a fraction of the programs provided by community library services across EMM. Programmes that were widely implemented by community libraries were School Holiday programs, competitions such as the strongest link, and talks by visiting authors and community leaders, skills development programmes and computer training programmes. Significant and very common were homework programmes and less prominent were Adult Literacy programmes, the latter clearly dependent on catchment population demographics.

Although great strides were made with respect to availability of materials and books a number of challenges were observed during this evaluation. The system for purchasing books has changed with the central office purchasing books for libraries. Choosing books from the Bibliographic and Technical list was limiting and often did not serve the needs of users. All of the librarians interviewed indicated that the books chosen do not always meet the needs of the community. When working in a community library *"you get to know what your readers like, you get to know what information the school requires for projects etc., and the new system removes the process of personalising the purchases."* The observation made during this evaluation was libraries were not meeting the expectations of users. Users expected libraries to house collections supporting formal education. The reference books provided to libraries in the past six months were outdated, because of the introduction of the new assessment system by the National Department of Basic Education. All the libraries indicated that they do not have learning material to support the Continuous Assessment and Testing (CAT) System. All libraries complained about damaged books. With the shortage of reference materials many of the reference books are torn, with learners removing critical pages leaving just the front and back covers of the book. All libraries have indigenous material however librarians reported that there was not sufficient interest in indigenous language material and few books were published in these languages. Librarians on the issue of books written in the indigenous language stated" *there was inadequate public interest in books written in indigenous languages*". Another issue raised was the translation. Books written in a particular indigenous language and sentiment of the book sometimes got lost in translation.

Toy Libraries

A Toy Library is a service that provides access to a collection of play materials including toys, games, puzzles, activities, educational aids and general play equipment. Generally, the service is open to members of the public including families of children with and without special needs, ECD centres, schools and the youth.

The toy libraries enabled children living in the most marginalised and poor homes to access educational toys. Poverty creates an obvious inequality for children in access to books, play equipment and materials. Toys can both stimulate and prolong play, although toys need not be expensive to fulfil this function. In addition, where children were living in unsuitable housing conditions, there may be diminished opportunities, particularly for outdoor play. Through toy lending, toy libraries redressed in some part the imbalance between the supply of play equipment available to children from more affluent homes and those growing up in families affected by poverty. The increased levels of poverty in households particularly children living in informal settlements was a factor in the growth of demand for toy libraries. All the libraries that were sampled had a toy library. In essence the libraries had toys available, however in majority of the libraries the toy library was not functional. The challenges indicated for why the toy library was not functional because staff were not trained to run the toy library. In addition, there was insufficient staff to manage the toy library, there was also insufficient space to display the toys on a permanent basis resulting in many of the toys being locked away in a cupboard. In majority of the libraries located in townships, the consignment of toys was received in the past six months. The evidence observed was the toys were in the original packaging, the toys looked unused, boxes containing games and puzzles were unopened and in some instances libraries were still cataloguing the toys.

Mobile library bus

In an effort to redress this disparity, the municipality has identified community libraries as key agents of development to improve the quality of life of all citizens. In addition the city recognizes the need for all its communities to have improved access to library and information services. It is in this context that initiatives such as the mobile library has been implemented across EMM, particularly in communities where the distance to travel to a library is too far. Ekurhuleni purchased two new mobile buses to deliver the service. It is estimated that Ekurhuleni reaches all 119 informal settlements with little or no access to library information services. The mobile library bus `was very effective in that it provided access to communities that would not have access to books and materials. All informal settlements in Ekurhuleni have access to the mobile library with an average of 20,000 to 30,000 books borrowed annually. The mobile library did not only encourage reading among children but it also encouraged adults in these communities to read.

The challenges identified during the evaluation there was lack of facilities on a mobile library vehicle for its users - facilities which even the smallest library attempts to provide. These facilities include reference materials, tables for readers, and a fairly wide range of representative books on many subjects and in varying degrees of specialisation. There were no study facilities, little in the way of periodical and audio-visual materials provision and limited provision of community information.

The collections were also much smaller, due to space limitations. Book selection could be as full or comprehensive as even a small static library, as shelf space was restricted. Restricted time - mobile services, was not available for any length of time - and schedules were invariably restrictive. Mobile libraries by their nature move from one place to another and must of necessity provide much less time for public service at any given area than a fixed agency. As well as being in the neighbourhood for a limited time, the mobile library vehicle was not as dependable as a static building. There were some unforeseen challenges for example the mobile bus had a breakdown which resulted in the mobile not going out to the community. The situation inconveniences users in particular by these changes to routes as a result of holidays, rescheduling, breakdowns and maintenance.

Usage

Public libraries provide a universal service open to all, and serve many different groups within the communities, often with differing needs and interests. Libraries provided access to knowledge through books, journals, newspapers and the internet, providing study space as well as more specialist resources. The societal context in which public libraries operate is rapidly changing, presenting them daily with various challenges: in the field of digitization, changing usage patterns, and evolving expectations of users. There was significant variation in responses between libraries in respect of services offered. Technological developments had a profound effect on how people accessed and this continues to provoke significant changes within libraries. Libraries are beginning to promote literacy and inspire engagement with culture. Libraries were also social spaces where people met, learnt from each other and at times provided access other services such as being an interview centre for employment programmes. Many libraries had a longstanding history of local public service and can represent part of an area's heritage and act as physical landmarks for a community.

It is clear from the analysis detailed above that the usage of libraries has increased following the improvements in the infrastructure of the library, the programme and services available. Evaluation participants indicated that a large degree of the increased usage comes from the groups and individuals coming to do homework, projects and studying through distance education. This has been enabled by the infrastructure available and the setting up and supporting library users as groups or on an individual basis. The availability of study space was crucial, and those libraries that have small study areas already seeing the value: '*The study area does a lot, but having a small area is really limiting in that not all learners can be accommodated'*. At least half of the sampled libraries indicated that they engage in outreach activities with the local schools and ECD centres. This increased reach resulted in increasing the volume of users, and this was commented on by librarian: '*since the refurbishment and since the new study area in the library, we've been able to attract more learners which has directly increased the number of people we can provide support'*. During the visits to the libraries the comments/complaints books were read. The comments/complaints were written by the users. In summary, there were more compliments than complaints documented. For example, community libraries are flexible and impose no time limits, apart from opening and closing hours, on how individuals choose to structure their visits. Majority of the libraries expressed the effectiveness of their services as encouraging reading; promoting digital literacy and providing access to the internet; helping people find information of all kinds, whether specialist knowledge or information about local services.

Many of the community libraries go beyond these activities and provide access to other services on site or are exploring new ways of providing the library service. Some community libraries are locating the service within a wider effort to strengthen the local economy – fostering innovation and enterprise, providing space for companies who want to recruit youth into particular job offerings amongst many other initiatives. Two Chief Librarians suggested that collocation of libraries was an effectiveness criteria because it increased the libraries relevance, while two others considered the impact that libraries can have on the community to be important, such as their contribution to improving literacy and wellbeing. Others felt that their library was providing a good service to the community, and was better able to tailor their service to local needs. Respondents stated that their library: was much better able to acquire stock specific to reader's needs; had greater ability to act as a community resource; was able to provide a wider range of services; was now a safer environment for children, and was a much more pleasant place now. Despite general increase in user numbers, this has not universally translated into increased book issues, and all the libraries sampled indicated that there was an increase in usage, however this increase was not mirrored by an increase in book loans. Therefore it is evident that current library usage is much broader than borrowing of books for recreational reading

Staff

Perhaps the most basic premise for delivering a great library user experience is knowing what members of the user community want from the library, and being able to articulate their service expectations of the library. Then, using that knowledge, the librarian's responsibility is to design an experience that delivers on those expectations and exceed them when possible. Much depends on the staff of the library's ability to identify and develop services that meet user expectations. It is important to acknowledge that many members of staff who participated in this evaluation, whether frontline or management, reported that the changes to the role of staff in libraries was not particularly new to them. There has been a broad trajectory of change in recent years, and the benefits of this programme was difficult to separate entirely from other changes to the library service. That being said, staff themselves saw differences as a result of the programme, and saw that the programme had involved elements of development to their roles. Staff in the sampled libraries have begun to consider their role differently as a result of the infrastructure investment. This change was varied across the programme, and all libraries experienced challenges in changing the roles for staff. Interviews with frontline staff at different libraries highlight that staff agree with and endorse the need to change to respond to community needs.

In terms of the changes on the individuals and their roles, however, they saw the programme instilling a culture change, where users and the community expect different things from libraries and library staff. This highlights that although community libraries have experienced change differently, the key thing for staff has been very much the changing role within the local area and the effect that this has had on their role and how they are perceived by users and the community more broadly. Staff describe the changes to their role more in terms of how they work with individuals who come into the library and community groups who work with the library than about things like specific skills. In many instances, staff saw these changing roles very positively. There was a view that perceptions were changing amongst users. They saw the library as more friendly, open, changing to meet demand and more attractive to their community. It was also clear that this effected how staff viewed themselves, and wanted to meet that changing demand: '*It's all a higher standard – we have to deliver a first class service. We feel a responsibility to that'*. This change was hard for many staff to deal with though, and it is apparent that some felt like they needed more support and time to make such large changes. This was recognised by management staff across the programme as well: *'Everybody has to raise their game – to meet the demands"*. There was a strong endorsement for an approach that supported the community needs and interests– but there were also some who felt that something was lost from the traditional library service. Of all the stakeholders who took part in this evaluation, it was the staff who raised the most fears. '*It's not just a library anymore*'.

One of the main factors of the programme that has encouraged staff roles to change is the physical layout of the library. Moving away from large counters to remove the ‘barriers’ between staff and users has increased interaction and has resulted in one of the fundamental changes to the role of library staff. Staff often commented on increased ‘floor walking’, being ‘freed up to do other things’ and being more accessible to users. There have also been, in a number of instances, staff brought in to libraries as a result of the programme who have different backgrounds, skill sets and perspectives. Typically these included educational skills, teaching and learning skills, research skills community engagement and volunteering skills. It was evident that the involvement of new skill sets in libraries has impacted on front-line managers and staff as they have learnt from new colleagues. Observations and feedback from library managers were mixed. The strengths identified in the previous section is reflected through the programmes and support provided at the library. Despite this, there were a number of challenges identified. The main challenge commented on was the low quality of services from staff due to lack of staff training and skills. Library managers indicated that staff need to be better trained to work with underserved populations and find information that meets the day-to-day needs of local people. The library staff need to have knowledge on how to solve daily problems. But for now, “*we have few staff that can do that”*. During the evaluation some of the library managers indicated that the staff were not sufficiently motivated to carry out their roles and responsibilities at the library apart from reaching out to the community to understand their needs and respond appropriately. It was observed that library staff are typical of government employees who would leave for the higher compensation in another library. Library employees are government employees, and as such can’t be laid off, are rarely open to undertaking new tasks and see community outreach and working in ECD centers or schools (taking the library to the children) as extra work they don’t need to do. They resist change and limit themselves to finding books requested by users and have little or no positive influence in addressing library patrons’ needs. Three library managers felt library staff had poor attitudes or were locked into outdated habits. This was observed by the evaluation through the responses provided during the interview and the physical disposition of the respondents (library staff). Although the library staff cited libraries’ connection with communities as strength, it was just as often seen as a challenge. For librarians, challenges centered on inadequate levels of community participation, commitment and buy-in. People who live near public libraries don’t come to the library. Both the library managers and the librarians themselves indicated that insufficient time is spent on outreach activities. Staff retention – high staff turnover impacts on delivery of services to the community. It seems likely that without a single point of reference provincially, that outlines the service standards expected from community libraries, that growing variation in standards of service will occur over time.

Recommendations

Throughout this report there is a strong evidence of developing practice, and this has been highlight in this report. It has not been straightforward, and not all libraries in the evaluation have lived up to the potential of the programme. Also, more should be done to link new groups and partners using the library to core objectives for the service itself, such as reader development. Other areas for development include internal and external communications, better visions and more training for frontline staff. More specifically the areas detailed below requires improvements:

A more responsive community library services

A local needs assessment should be undertaken periodically by all community libraries (Chianca, 2008). Tools exist to support this process, and a great amount of relevant data would be gathered so more appropriate programmes could be implemented. Any strategy for the future must reflect local need and ensure that services are being delivered fairly. The library service is a 'universal service', which is expected to encourage access. Listening to local communities and understanding their needs is fundamental. All service planned starts with a detailed analysis of need and maintains effective user and community engagement throughout the process, with the process and methodology itself is clear and transparent. Needs assessments must take account of trends and future projections particularly around the most disadvantaged communities and equality analyses should be applied throughout the process.

ICT

The technological landscape is extremely fast changing to the extent that it is barely recognisable compared to 10 years ago. This is one of the challenges to more traditional library service delivery, with people expecting services including library services to be delivered differently and offering more. The introduction of electronic books will become available in community libraries. This signals that people's preference for how they search, access and read information is changing and to survive library services need to change how they provide this information too. Increased digitisation will also mean library services need to change what services they deliver: Although some people have online access at home or on the go, evidence from the geographic profile of communities shows that majority do not have access to the internet at home but use it in public spaces do so by using the facilities provided by their local library. Library services clearly play a critical role in getting more local people online which itself brings many opportunities for the municipality such as being more efficient and attracting new audiences, and open many doors for individual users through for example learning new skills and combating social isolation. Coupled to this increasing demand for digitization is appropriate ICT technical support. Although many ICT services are available to the community libraries, the technical expertise of these personnel needs to match the merging demands.

Building on existing provision

One of the key finding of the evaluation indicates that where there has been investment in re-designing public libraries, with new buildings and large scale renovations, the libraries attract a larger number of users. Of course in tough economic times renovating or developing new buildings to host library services is not always a tenable option as resources and needs vary significantly between different communities. However, where new or refurbished buildings have been completed, this has had significant positive impacts on library usage. It is recommended that even if large scale renovations and constructing new libraries are prohibitive, getting the community involved in uplifting the physical environment could result in attracting more users.

Looking at communities and users differently

The first change is a shift from customer orientation to customer care. Customer care is about going the extra mile and having the skills to understand and assess the needs of library users. It is about recognising that customers are not all equal in their life experiences and chances; so they should not treat all of customers in a standardized manner, but in a way that meets their individual needs. This challenges some deeply held professional library paradigms around issues such as equality, fairness and neutrality. The second example is a shift from libraries that are based in communities to community based libraries. Many libraries are based in the community, but not all libraries are community based. There should be a positive and dynamic relationship between the library and the people who live in the neighbourhood.

Library services

There is a continued need to develop library services with the community as key partners. This can be done to continue what is working to develop libraries as “Connect Points”, and as access to other services, via libraries. It is also seen as important to address the issue of providing space in libraries for community groups, through the capital programme; expand and review the programme offering to meet the needs of the community; increased outreach to the community by taking the library to the people e.g. ECD centres, primary and secondary schools, clinics etc.

Mobile library services

Mobile library services needs to be re-organised to maximise service delivery time, and to improve use of the bus. This will involve: Re-basing and re-routing, develop criteria for mobile library stops and cutting out very low use stops

Opening hours

The evaluation results confirm that libraries were used by information seekers. Libraries were used for borrowing books, access to reference books, ICT and programmes. The librarians shared their views on the utilization of the library. When asked to give advice, many suggested increasing the library's quantity and variety of information resources—"more books" was often cited—as well as the number of hours libraries were open. It was evident that users clearly wanted to be able to visit the library, but they want the services to be more convenient. It is recommended that during the assessment of the community needs consideration should be given to opening later in the day as the mornings were not busy and remaining open later in the evening thereby creating increased access.

Conclusion

The evaluation's final conclusion is that public libraries have an important role to play in achieving the outcomes of the community library infrastructure programme. Community libraries need to be transformed "to become much more proactive, interventionist and educative institutions, with a concern for increased literacy, a better performing society and an improved reading culture at their core." The specific strategies for such a transformation were identified as: "the mainstreaming of provision for disadvantaged communities and the establishment of standards of service and their monitoring; the adoption of resourcing strategies which prioritise the needs of disadvantaged communities; a recasting of the role of library staff to encompass a more socially responsive and educative approach; staffing policies and practices which address exclusion, discrimination and prejudice; targeting of communities; the development of community-based approaches to library provision, which incorporate consultation with local communities; ICT and networking developments which actively focus on the needs of disadvantaged communities; a recasting of the image and identity of the public library to ensure increased utilization.

References

Austrian Development Agency. 2009. Guidelines for project and programme evaluation. Austrian Development Agency, Evaluating Unit. Vienna. Available: https://www.oecd.org/development/evaluation/dcdndep/47069197.pdf. [2017, September 15].

Chianca,T. 2008. The OECD/DAC criteria for International Development Evaluation: an assessment and ideas for improvement. *Journal of Multidisciplinary Evaluation*. 5:9, 41-51. Available http://www.ipdet.org/files/Publication-The_OECD-DAC_Criteria_for_International.pdf.

COPING WITH THE FIRE DISASTER AT MZUZU UNIVERSITY: EXPERIENCES FROM LIBRARIANS AND STUDENTS

Gift Alfred B. Dube
Children's and Outreach Services Librarian and part-time lecturer
Department of Library and Information Science
Mzuzu University, Malawi

Allan J. Kanyundo
Technical Services Librarian and part-time Lecturer in Library and Information Science
Mzuzu University, Malawi

and
Felix P. Majawa
University Librarian and senior part-time lecturer in the department of Library and Information Science
Mzuzu University, Malawi

Abstract

This study provides an account of the experiences of library staff and students at Mzuzu University as they coped with the fire disaster. A phenomenological research design was used to elicit experiences of both library staff and students when coping with fire disaster. Purposive sampling was used to identify library staff and students who participated in the study. Interview and focus group discussion was used to collect data from library staff while a questionnaire and focus group discussion were used to collect data from students. The study revealed that library staff used several strategies to rebuild the collection and provide service to students, such as appealing to donors and partners, using electronic resources and establishing a short loan counter. Library staff experienced both challenges and opportunities during the time of rebuilding the collection. Challenges included delay in acquisition of resources and lack of processing tools a while opportunities included learning new skills, teamwork and acquisition of new resources among others. Students also faced challenges and opportunities when adapting to new ways of information delivery. Challenges included inadequate resources, lack of reading space, and limited access to electronic resources due to limited skills and poor network while opportunities included new skills, new resources, and a new information seeking culture. The library devised some strategies to minimize students' challenges, which included increasing hotspots, increasing band width, training students in internet skills, and opening an interim library to provide more resources and reading space. Data was presented using tables and analysed using narrative text.

Key words: *Fire disaster; Library; electronic resources; Library staff*

Introduction

Libraries experience disasters in many forms, including fire, water, earthquakes, and vandalisms. Library fire disasters have occurred throughout history. Alexandria Library, in Egypt, was partially destroyed by fire in 48BCE, and several historical artifacts and information sources were wiped out (Wilkinson, 2015). In 1986, approximately 400,000 volumes were destroyed by fire in the Los Angeles Central Library; in February 1988, fire gutted 400,000 newspapers and scientific periodicals and 3.6 million books in the USSR Academy of Sciences (Ngulube and Magazi, 2006). In 1994, fire destroyed 100,000 records of Norwich Central Library in England (Rattan and Payare, 2012), and on September 2, 2004, fired destroyed the Historic Library in Weimar, Germany, with 30,000 volumes of rare resources and unique works destroyed (Eberhard, 2004). Despite the nature, timing, and severity of fire disasters, each disaster causes great loss of precious resources and information (Adinku, 2005; Mchone-Chase, 2010) and also presents opportunities to librarians (Steward, 2014). When disasters strike, library staff engage in disaster response and recovery activities. Wong and Green (2006) distinguish disaster response from disaster recovery as follows: disaster response includes “all activities from the moment the disaster strikes until the disaster cleanup is finished while disaster recovery is all activities and decision making processes that are essential to resume the library’s operations and services” (p. 76). Library institutions over the years have developed disaster plans for effective and efficient response and recovery from disasters (Hazlett, 2017; Ngulube and Magazi, 2006; Wong and Green, 2006; Adinku, 2005). This paper focuses on experiences of librarians and students after the Mzuzu University Library fire disaster.

Context

Mzuzu University was established by act of Parliament in 1997 as the second Malawian public university. With five faculties and three centres, the University has a student population of 4,067: 2,709 generic and 1,358 open and distance learning students; 184 academic staff; and 270 support staff (Mzuzu University Registry Record). On Thursday, December 17, 2015, the University Library closed its business day at round 10:00 pm as usual, with limited pressure from users as it was only one day to the official closing of the University for Christmas holiday and the end of the first semester. Most students had finished writing their exams and had gone home, and few were remaining to write their final papers the next day. While everyone was anticipating the holiday closing and time off—for university faculty and staff, a break from the hard work of teaching and helping students meet their needs academically and socially, and for students, time off from studies and pressure from meeting assessment deadlines—the unexpected news of fire gutting down the library greeted the University community in the early hours of December 18, 2015. The news came like a nightmare to many. No one had expected or imagined that this centre of knowledge and the oasis of wisdom could unceremoniously be gutted down by fire. All responded to the unexpected event with shock and disbelief. University leaders and staff rushed to the campus upon hearing the news that the library was on fire, and those who could not be reached by phone were informed by the dazzling flame and cloud of smoke that lit and covered the sky. Others were never told about the incident and were greeted by the gutted library in the morning as they were either reporting for duties or coming to write their final end-of-semester exam. Many pondered with self-imposed questions without answers: What has happened? Why the library? The cause of the fire remains a mystery. However, it is speculated that it might have been caused by an electric fault.

Firefighters from Mzuzu City rushed to put out the fire. The scene was full of people: staff, students, and community members. Some helped to put out the fire, and others tried to rescue resources as the fire fiercely forced its way through the entire building. Others became spectators to the drama that was never planned or rehearsed, and still others found an opportunity to steal what was rescued. Rescue efforts became futile as the structural woodwork and carpet of the library fueled the fire. In no time the whole library was in ashes except for technical service area and server room in the main library, the Children's Library, and the American Corner, which were in an annex to the main library. These sections were separated from the rest of the library by concrete wall~~s~~. The engagement of firefighters proved useless as the fire engine that came first ran out of water. After a while two additional fire engines came, but the emotionally charged students, in frustration, chased them way. By 5:00 a.m. on December 18, 2015, the library completely collapsed, and the rescue mission was called off. Students who helped with the rescue process were told to go back and prepare for their exam at 8:00 a.m. A total of 45,000 volumes, 80 computers, 500 reading chairs, and 62 tables burned to ashes. As librarians and staff pondered where to put the rescued items, they were greeted by rains. Taken unaware, they struggled to find tents and plastic bags to cover the rescued items; hence, library materials were soaked and more damage was done. The end of the rescue mission quickly switched from disaster response to disaster recovery.


Library before


Library on


Library after

Problem Statement

The research literature has discussed different types of disasters that over the years have affected libraries. Each of these articles presented detailed accounts of what actually happened in each incident. In some cases, authors presented different ways librarians have responded to these disasters and how the process of recovery was done (Wilkison, 2015; Ngulube and Magazi, 2006; Wong and Green, 2006). In addition, some authors have written stories of disaster response and recovery activities, drawing from their personal experiences (Roberts, 2015; Holderfield, 2007; Hirst, 2008). Others provided guidelines on how librarians can respond to disasters based on experiences drawn from several incidents that they have read about and experienced (Hazlett, 2017; Barkley, 2007; Ngulube and Magazi, 2006). Learning from these articles and experiences, it is very clear that when disasters occur, librarians and those affected not only devise strategies for coping with these challenges (McHone-Chase, 2010); they also take advantage of the opportunities that arise from these disasters (Steward, 2014). Since the fire disaster occurred at Mzuzu University Library, nothing about the experiences of librarians and students during the disaster recovery has yet been documented. This paper, therefore, presents a documented account of the librarians who were physically involved during this disaster and the students whose academic life was affected.

Purpose of the Study

This study intends to provide an account from librarians and students on how they adapted after the fire disaster through narrative accounts of personal experiences from library staff and students.

Research Questions

This study intends to answer the following questions:

1. What strategies did librarians at Mzuzu University adopt to rebuild the collection and provide library services to students?
2. What challenges and opportunities did the library staff at Mzuzu University face during the process of rebuilding the collection?
3. What challenges and opportunities did students at Mzuzu University encounter with the newly adopted information service delivery methods?
4. What strategies did the librarians at Mzuzu University use to alleviate the challenges that students experienced because of the new information service delivery methods?

Significance of the study

This study will inform librarians and other information personnel on how to deal with disaster recovery, appraise them of the challenges encountered during a disaster, and highlight possible ways of dealing with such challenges during disasters. Since this paper is written by those who were physically involved in fire disaster recovery, the paper provides a firsthand account of decisions made and processes implemented while librarians, management, staff, and students managed the emotional aspects of the disaster. It is hoped that the practical lessons presented in this paper will provide insights for managing disasters in libraries to practicing librarians and other information personnel.

Review of Literature

Strategies for Recovery of Disasters

Development of Disaster Recovery Plans

Ahenkorah-Marfo and Borteye (2010) define disasters as incidents that threaten and damage the library's building, collections, contents, facilities, or services. Disasters can be caused by several factors, including fire due to arson or electrical fault, water, and others. Institutions affected by disasters such as fire have used disaster recovery plans to facilitate a quick, effective, and efficient recovery and resumption of services. Wong and Green (2006) explain that disaster recovery involves "all activities and decision-making processes that are essential to resume the library's operations and services" (p.76). Disaster plans help people to make quick, effective, and efficient decisions for speedy recovery and promote service continuity (Hazlett (2017; Adamo (2016; Rattan & Payare, 2012).

Setting Priorities for collection development

Prioritizing in a disaster environment allows people to commit time and resources first to things that are more important. Librarians need to identify priorities before the disaster so that materials that are most valuable or difficult to replace and process are given high priority during disaster recovery time. Priorities should be based on needs and providing continuity of services (Adamo, 2016; Wong & Green, 2006). After the earthquake at the University of Canterbury, Law Library staff identified resources that, if prepared, would have greatest impact on resumption of core library services at the university (Roberts, 2015).

Identification of Right Human Resource

Barkley (2007) explains that dealing with disaster requires people who are flexible and have creative problem-solving skills. Disaster recovery requires collaboration of different personnel to deal with specific activities. In the process of disaster recovery, librarians deal with fiscal, physical, and emotion challenges that require team work and shared responsibility. During crucial disaster situations, personnel deal with practical issues of building, collection, and services (Wilkinson, 2015; Ngulube & Magazi, 2006).

Space for Security of Items, Staff, and Continuity of Services

Holderfield (2007), Director of the Dongola, Illinois, Public Library, advised that during a library disaster, staff need a secure building or a place where rescued library materials and those being returned from loan can be kept to avoid theft or further damage due to weather. The University of Canterbury Library disaster plan has a continuity plan that stresses the importance of a safe building where staff may work and provide core services during an emergency (Roberts, 2015). During the Iowa City Flood of 2008, library staff re-located to safe buildings and continued processing materials and offering basic reference services (Hirst, 2008). Adamo (2016) and Stewart (2014) stress that during an emergency, it is important that librarians identify a place from which to continue library services and safe locations to store library materials.

Partnership with Other Libraries

Librarians partner with staff from other libraries to continue services during disasters (Adamo, 2016). McHone-Chase (2010) explains that librarians rely on interlibrary loan services during disasters for the collaboration and partnership of other librarians.

Challenges

Most institutions do not have disaster recovery plans, this affects effective decision-making and delays service continuity (Wong & Green, 2006). For example, Ahenkorah-Marfo and Borteye (2010) found that the Kwame Nkrumah University of Science and Technology (KNUST) main library, with 1,650 seating capacity, 25,000 users, and 290,000 volumes of books, did not have a disaster plan of any sort.

Disasters are emergencies, and institutions need extra financial resources to replace destroyed items. Limited financial resources during disaster emergencies affect level of replacement of destroyed resources (Adamo, 2016; Rattan & Payare, 2012; Ngulube & Magazi, 2006). In addition, limited funding denies users the opportunity to access resources that are destroyed as it may take time to replace them as librarians wait for adequate funding, especially rare collection resources (Ngulube & Magazi,2006).

In some cases, even though the library might have some resources remaining, the lack of appropriate and secure places for staff to provide continuity of services becomes a challenge. Despite having some resources that students could access after the earthquake, the University of Canterbury Library could not offer services to students because of safety concerns (Roberts, 2015).

Further, library staff and users have to adapt to new modes of service delivery that require new equipment and skills to a

llow continuity of services after a disaster. For, example, new technology to access information and new processes required for the use of digitalization of materials may require library staff to develop skills that may not have been used before (Adamo, 2016; Breeding, 2012).

Opportunities

Steward (2014) states, “Disasters present an unprecedented opportunity for libraries to highlight their value to [their] community as professional providers of reliable information. [And they have] an opportunity to refocus to improve services and facilities” (p. 306). Ngulube and Magazi (2006) say that disaster recovery provides feedback on emergency plans as staff who are involved share experiences.

Disasters provide library staff and users an opportunity to learn new skills and acquire new equipment and facilities as they adapt to new ways of information delivery, such as use of digital resources; internet, such as Google and interlibrary loan (Adamo, 2016; Breeding, 2012; Mchone-Chase, 2010). Further, library staff learn new values of unity, collaboration, and leadership in the process of disaster recovery as response to disaster requires multiple skills (Ngulube & Magazi, 2006; Wong & Green, 2006). An interview of participants of the University of Iowa Libraries and University of New Mexico Libraries highlighted cooperation and coordination of participants as they worked in teams for the common good, highlighting fluid leadership among teams as a key attribute during disaster recovery (Wilkinson, 2015).

Methodology

This study adopted quantitative and a qualitative approach, with a phenomenological research design. Creswell (2014) defines phenomenological research design as the “researcher describes the lived experiences of individuals about a phenomenon as described by participants. This description culminates in the essence of the experiences for several individuals who have all experienced the phenomenon" (p. 14). This design suits this study as participants in this study are those who experienced the process of the Mzuzu University disaster recovery. Data were collected through use of a questionnaire, interviews, and focus group discussions (FDG). Questionnaires were distributed to students' representatives across all six faculties, and four senior library staff were interviewed based on their roles as E-resource librarian, technical services librarian, Children and Outreach librarian, who served as coordinator of disaster recovery activities, and University Librarian. Two focus group discussions were conducted involving library staff (FDGLS) who were supervisors in sections and students' leadership representatives (FDGSL). In addition, a narrative account from the authors who were directly involved in the recovery activities is presented in the study.

A purposive sampling method was used. Picardi and Masick (2014) describe the purposive sample as when the researcher selects participants who have relevant knowledge to the study. This study involved 37 participants: 8 library staff (LS) (four senior library staff (SLS); four library assistants (LA)) and 29 student's leaders (SL) (6 student union leaders and 23 students' class representatives). These were directly involved in the process of disaster recovery as decision makers and representatives of users. Out of the eight library staff (LS), three who played a key role during the time of disaster and recovery, are authors of this paper.

Presentation of Results and Discussion of Findings

Through the use of a questionnaire, interviews, focus group discussions, and narration of personal accounts, data were collected to answer key research questions as presented below.

What strategies did librarians at Mzuzu University adopt to rebuild the collection and provide library services to students?Through interviews with senior library staff and a focus group discussion with library staff, it was revealed that the library adopted several strategies to rebuild the collection (see Table 1).

Table 1: Strategies used to rebuild collections and services

Appealing to donors resources	Sourcing books from departments
Collaboration with other libraries	Changing a hall into an Interim library
Expediting the acquisition process by focusing on e-resources	Drawing up a priority list that was sent to those who wanted to help
Conducting fundraising activities such as dinner dances to buy new resources	Establishment of short-loan for limited access of books
Establishment of hotspots for internet access	Engagement of temporary staff to assist in processing resources

The major method used that brought a lot of dividends was appealing to donors. Additional major methods were collaboration with partners, using electronic resources for service delivery, and creating a short loan counter. A member of the library staff focus group discussion stated that the library bought no new resources in the first three months after the disaster and relied on donations from well-wishers locally and internationally for new resources. Based on authors' personal experiences, apart from what donors and well-wishers gave, librarians also used a few resources that were rescued from the disaster and repaired broken furniture for use during the recovery period. For example, out of 7066 books acquired during this period, 4,595 (65%) were donated and 2471(35%) were recovered from previous library (Mzuzu University Acquisition Record, 2016).

What Challenges and Opportunities did the library staff at Mzuzu University face durig the process of rebuilding collection?

Through interviews of senior library staff and library assistant focus group discussions, it was revealed that Mzuzu University library staff experienced the following challenges and opportunities:

Challenges

Lack of space for storing rescued materials and staff to process Library Materials

During focus group discussion with library staff (FGDLS) and interview with senior library staff (SLS) it was noted that lack of space for storage and working was a challenge. As a result, most rescued resources were stolen or soaked in water by rains and could not be restored. For example, books soaked in water could not be dried in safe places. One member echoed that the library recovery effort would have been better if there was a safe place to carry rescued resources to.

Most items that people made an effort to rescue were lost in the process of recovery. In addition, staff did not have a designated space to work after the fire disaster. Library staff spent some days not knowing where to work from. The discussion group also noted that the absence of a plan made things difficult. One of senior library staff (SLS) and coauthor agreed with the group's observation as he stated:

> *I personally remember how things that I helped rescue went missing in the process. Some of these items were a good starting point* (SLS1[1]).

Lack of working tools and infrastructure for Processing Materials

During a focus discussion with library staff (FGDLS), it was noted that lack of processing materials such as computers, stamps, stationary-like paper, glue, and scissors stalled the recovery process. One member noted that ordering new stamps took more than one month, taking into account that resource processing was urgent and needed to be done in a specific period of time. Further, a senior library staff and coauthor in technical services noted in an interview that lack of an internet connection brought about challenges of developing bibliographic information and cataloging of resources. In his own word as presented in this verbatim:

> *Surely, in terms of instruments, we didn't have enough instruments because at that particular time we were . . . building our collection using online resources. Like we were using databases that [were] internet based, and our server [was] also, did not have internet at that particular time . . . . Computers were also gutted down by fire and we did not have computers (*SLS2[2])

From authors' personal experiences at one point, the library lacked both a computer for data entry and a printer to print labels. Computers rescued from the fire developed faults, and some were also missing parts, such as cable

[1] Narration from SLS1: Senior Library Staff 1 co-author

[2] Narration from SLS 2: Senior Library Staff 2 co-author

Time constraints and human resources

Senior library staff from technical services noted time and resource challenges in an interview as presented verbatim:

> *We really needed to put the collection back in a very short time so that the school can resume. That one was a big problem, to be able to build the collection in a short period of time…. Human resource—it was a challenge because we needed a lot of human resources on the ground to make sure that some of the people are consolidating needs...while others [were] processing some materials*(SLS2*)*

These sentiments were echoed in a focus group discussion with library staff who noted time and human resource pressure led to abandoning some activities for others, which was a sign of panic. The authors also, from their own observations, noted that there was too much to do with the limited resources and staff. In some cases staff had to work late nights and weekends.

Knowledge gap between Library Staff and Stakeholders

Decisions on how the library should develop its collection shifted from the library to the university boardroom. Librarians were generators of information on which decisions were made. There was at times a misunderstanding as regards to what stakeholders needed and what was logistically and environmentally possible and acceptable. For example, a decision was made to develop a new library collection based on electronic resources only because it is an easy and fast way to getting resources, and in addition, there are a lot of free resources online.[3] From the librarian point of view, having only electronic resources was not tenable because of students' background, as most students had limited skills, could not afford electronic gadgets, and subscription to e-resources was more expensive due to limited time that publishers allow users to access. In addition, freely available online resources did not meet all needs of students. Other freely available resources, such as Google Books, provided only partially access (Lizzie Malemia, Senior Library Staff, personal communication, October 7, 2017). Further, there was a misunderstanding about buying thin client computers and desktops. Stakeholders wanted thin clients while librarians wanted desktop computers because of the previous experience with thin clients on security issues. These discussions delayed the procurement of what was needed.[4]

[3] Narration from authors' experiences

[4] Narration from authors' experiences

Delay in the acquisition of resources

Through focus group discussions, interviews with library staff acquisition of resource stalled due to several resons:

i) Lack of funds

There was no money for the resources as the incidence happened in mid-year and the university had exhausted its first-half budget. A senior library staff in technical service asserted:

> *We really needed to replace the collection quickly, but our buying power was very weak. . . . That one was a big problem, to be able to build the collection in a very short period of time where we did not have funds. Acquisition of library resources depended on well-wishers, and it was difficult to determine when they would respond. [Some] responded quickly and others did not* (SLS2).

ii) Procurement Processes

The processes of procurement at times stalled the activities of collection building. During a focus group discussion with library staff (FGDLS) it was noted that although the Director of Public Procurement had made some waivers in the procurement process, suppliers took time to source what was needed. This stalled processing and acquisition of necessary resources. For example, procurement of computers and furniture for the library required a lot of time for suppliers to make them available. Members indicated that one of the major challenges was to replace the special collection that it is out of print. Without funds for reprinting, the only option was to ask those who had the titles to donate them, and it was not easy to find such donors.

iii) Identification of needs

Collection development for the library is a holistic activity. It requires taking into account needs of all departments. The major method of identifying these needs was through consultation with academic staff.[5] In a focus group discussion with library staff, it was noted that compiling of list of resources to be presented to well-wishers and donors was delayed because some departments took a very long time to give the library the list of their information needs. In some cases, the librarians used their knowledge to come up with a department's information needs. For example, the librarian who had knowledge of education

[5] Narration from authors' experience

helped to come up with the list of education books to avert further delay in submitting information needs to donors(FGDLS).

Opportunities

Availability of opportunities during disasters is supported by Adamo (2016); Breeding (2012) and Ngulube and Magazi (2006). Rebuilding the library brought the following opportunities to library staff:

Library staff acquired new skills in handling resources and designing activities.
A focus group discussion with library staff revealed that staff who never worked in technical services had a chance to learn skills in cataloging and classification. Further, one senior library staff noted she learned new skills in dealing with new electronic resources such as the use of e-granary (a digital collection of teaching materials for off-line use). One of senior library staff and coauthor also recounted how the experience gave him new skills as follows:

> *Personally, as a coordinator of activities for reestablishment of library services, I acquired new skills on organizing people, making presentations to management, and designing a new library. The disaster made me acquire new information about different resources and how they are organized. Since, I was [responsible for] coordination [of] library rebuilding activities, I attended management meetings where I could defend some decisions on collection development. This experience required me to be prepared* (SLS1).

Teamwork
Rebuilding a library collection brought about teamwork. The previous library had different sections with specific staff assigned to each. The issue of collection development was a domain of technical service. However, after the fire all sections were dissolved. All library staff worked as a team as information processors. An interview with one of the senior library staff highlighted teamwork during the time of rebuilding the collection:

> *I saw a very, very comprehensive teamwork spirit. There was shortage of staff in the technical services, but we were able to unite to work together. We developed a very, very wonderful team spirit and we cherish that one* (SLS2)

Teamwork was also noted in the focus discussion with library staff who mentioned that the library worked as a family with one goal and sharing the same emotions.

New Resources

Rebuilding of the collection of the library bought new resources. The old library that was inherited from the Teachers College of the 1980's had old stock. The appeal to well-wishers for donations of resources was based on the needs of the university. The library received the latest and most needed relevant resources. New and relevant resources were acquired, new processing materials were acquired, and the library explored other means of doing things. For example, Nielsen Bookdataonline database for identifying, searching and consolidating bibliographic data was replaced by Amazon book data (SLS2). In addition, the decision to use more electronic resources in the library made the university increase Wi-Fi hot spots around the campus, and the library acquired e-granary, Outernet and TEEAL (Lizzie Malemia, personal communication, 7th October, 2017).

Advocacy

Rebuilding of the new library provided librarians with an advocacy tool. The absence of the library made people realise its importance. The school calendar was based on the readiness of the library[6]. One of the senior library staff in an interview said that the vice chancellor in one of the meetin gs in the boardroom mentioned that the burning down and collection rebuilding processes of the library had made him understand more about the library and its importance. University community members looked up to librarians as regards to advice on collection development and design. At one point, a senior library staff was invited to the boardroom to explain about Kindles so that the university could make decisions on whether to acquire them through donations (SLS3[7]). In addition, in a focus group discussion with library staff, one participant commented on advocacy as follows:

> *We took that opportunity to advocate for library activities because many people from different backgrounds came to appreciate the job that the library did. For instance, Mzuzu City personnel came to [commend] the good job library staff did, the management of it, [which] the vice chancellor and deans appreciated* (LA)[8]

In support of the above, the authors also observed that through interactions and activities on the ground, librarians were able to showcase their skills as information professionals. When the new interim library was built, university community members shared positive remarks, such as, "You guys are

[6] Narration from authors' experience

[7] Senior library staff and coauthor

[8] LA: library staff who serves as library assistant.

professionals." At one time, when there were visitors touring the library, the vice chancellor voiced his satisfaction on how library staff worked and organized information.

New partners

The library used to work with specific partners who had been helping it in collection development. However, after the fire more partners came in. These included Strathclyde University with donation of new furniture and books, Books for Africa through the American Embassy, Virginia Technical College, the University of Malawi, Ireland, BookAid International, and others (SLS2).

What challenges and opportunities did students at Mzuzu University encounter with the newly adopted information service delivery methods?

Using a questionnaire and focus group discussions, data were collected to determine challenges and opportunities that students encountered when the library provided services without the library.

Challenges that students encountered with new adopted information services delivery

Coping with academic work without a library

Students were asked how they coped with their academic work without a library

Table 2: Strategies students used to cope without a library

Response	**Total**	**Percentage**
1.Used notes from lecturers	6	21
2.Used Internet	15	51
3.Used photocopied materials	5	17
4.Went to look for information from other libraries in town	1	4
5.Other: • Relied on group discussions with friends • It was difficult to cope with academic work because materials that we were using were limited e.g. Computers and books	2	6
Total	29	100

Table 2 reveals the major source of information students used was the internet: 15 out of 29 (51%) of the students coped with academic work by mostly using the Internet. The least number depended on photocopied materials represented by 4%. On the other hand, others relied on group discussions with friends while some said it was difficult to cope with academic work because of the limited number of books and computers.

Students' representatives were also asked about challenges they encountered due to the absence of the library at Mzuzu University (n=29):

Table 3: Student representative responses concerning challenges

Response	Total	Percentage
1. Lack of reading space	8	28
2.Lack of places for discussions	2	7
3.Lack of reading materials	14	48
4.Use of library computers for research was no longer there	3	10
5.Other • Poor performance, as we relied on lecture notes • There was no sufficient time to use available books due to pressure of time	2	7
Total	29	100

Table 3 shows that 14 out of 29 responses, representing 48%, said that absence of the library deprived them of reading materials while 7% said absence of the library deprived them of a place do their discussions. Another 7% observed that absence of the library led them to perform poorly since they relied on lecture notes.

During the focus group discussion with students' leaders (FGDSL), it was also revealed that absence of the physical library had some psychological effects. Even though at least some students found the digital and online services the library provided in the interim to be useful, other students missed the physical library and collection. Students felt that without a library, the school was not real, as stated in the comment of one of the students' leaders:

> *I think one of the most critical issues that were visible among students was the aspect of psychology because the intervention that was being implemented was a new concept, whereas our university system was predominantly physical. In the absence of the physical*

structure of the library and materials, the students were psychologically affected (SL1[9]).

When students' leaders were asked what challenges the introduction of the temporary short loan collection brought, the following were their responses (n=29):

Table 4: Student responses to limited short loan collection

Responses	Total	Percentage
1.Inadequate reference materials	7	24
2.Time and space constraint since there was no space to sit and read	8	28
3.Limited taste for information products	3	10
4.Loss of confidence where the available reading materials could indeed satisfy information needs	10	34
5.Other: • Most relevant materials were not available	1	4

Table 4 reveals that more students represented by 34 percent (10 out of 29) responses felt that introduction of a temporary short loan collection in the American Corner eroded confidence in students as to whether the available materials could indeed satisfy their information needs. Four percent (1 out of 29) of the students' responses indicate that most relevant materials were not available.

In a follow-up focus group discussion with students' leaders (FGDSL), it was revealed that most students did not use the short loan collection because of time constraints. Students had to check out a book, take it to a reading space way from the short loan site, and return it within an hour.

Coping with academic work using electronic resources

Students were asked how they were affected when librarians decided to provide materials mainly in electronic format. Table 5 presents their opinions (n=29).

[9] SL: Student leader

Table 5: Student opinions about electronic resources.

Response	Total	Percentage
1.Limited access to information due to limited skills	4	14
2. Limited access to information due to limited network	15	52
3.Lack of gadgets(table lets, phone, laptops computers) to use for accessing electronic materials	7	24
4.Other: • High number of students few gadgets • Gadgets are so expensive to buy • Poor network e.g. Wi-Fi	3	10
Total	29	100

Table 5 shows that 15 out of 29 respondents (52%) were of the view that the decision by librarians to provide information mainly in electronic format blocked many students' access to information due to limited access of network resources while 10% (3 out of 29) felt that there were few gadgets available to cater to the information needs of a high number of students.

Findings during focus group discussions with students indicated that most students had limited access to electronic resources due to poor skills for accessing and evaluation electronic resources, poor Wi-Fi connectivity, and a lack of gadgets as access points. For example, one student leader (SL) in the focus group described these issues as follows:

> *Hotspots were there so that Wi-Fi was running, but with that kind of background where [students] come from typical rural areas with limited technology skills. So [for a] certain group of students, it was very much difficult to use these facilities* (SL2).

From the findings above, it is revealed that the internet was the major source of information, but students had limited access due to poor skills, lack of gadgets, and poor network connectivity. In addition, the absence of the library as a physical building created problems related to inadequate reading materials and lack of reading space; students were psychologically affected.

Opportunities for Students

Opportunities brought by emphasis to use electronic resources

Emphasis on using electronic resources brought the following opportunities to students (n=29):

Table 6: Student identified opportunities in response to the availability of electronic resources.

Response	Total (ʃ)	Percentage
1.Forced me to acquire new skills in the use of computers and other electronic gadgets	11	38
2.Forced me/parents/guardians to acquire electronic gadgets for my use	9	31
3.Opened my knowledge about the electronic resources available	8	28
4.Other: • I failed to cope up with technology	1	3
Total	29	100

Table 6 above shows that 11 out of 29 (38%) of the students felt that emphasis on the use of electronic resources forced them to acquire new skills in the use of computers and other electronic gadgets while only 3% said they failed to cope with the electronic information resources and technology.

In a focus group discussion with students 'leaders (FGDSL), it was revealed that use of electronic resources exposed students to the latest information and new resources such as e-Granary. In addition, it helped most students develop a new culture of relying on electronic resources as opposed to print resources. One participant expressed this as follows:

> *A new culture has developed even without the physical structures of the library. We can still survive and move forward. The culture has been adopted and confidence has increasingly grown that we can survive without physical structures, even the confidence on using the internet* (SL3).

From the findings above, the introduction of the internet and absence of the library provided students with new opportunities. Students acquired new skills in technology use and electronic information evaluation. In addition, students were introduced to new sources of information that help them change their attitudes towards the use of electronic resources.

What Strategies did the Librarians at Mzuzu University use to alleviate the challenges that students experienced because of new information delivery methods?

Using interview and focus group discussions with library staff, data were collected related to strategies the librarians used to alleviate challenges students faced when using new information delivery methods.

Coping with academic work using electronic Resources

One of the major challenges for students was how to access resources. During an interview with Lizzie Malemia, senior library staff responsible for e-resources, she described how the librarians introduced a training program on how students can access and evaluate electronic resources. Librarians increased bandwidth to improve connectivity of Wi-Fi and increased hot spots for WiFI access on campus. In order to increase confidence in the use of e-resources as a source of information to students who were used to print resources, the librarians engaged a resource person from the University of Malawi, College of Medicine who talked about the use of e-resources in the place of a physical library (personal communication, October 7, 2017). This session was also mentioned in a focus group discussion with students. Students described how the librarian from the College of Medicine encouraged many students to use e-resources as a trusted source of information for academic work. In addition, the librarians strengthened the network infrastructure so that student could access some e-resources through a local area network.[10]

Lack of Reading Area and Other Resources

In the early days of the new semester, students were temporarily allowed to use teaching areas for studies during the day and night. However, an assembly hall was turned into an interim library. It was opened with a seating capacity of 400 and provided space for students to study[11]. The library prioritized processing of all resources required by students and lecturers. Librarians gave priority to resources that were on course outlines in order to easy resource pressure faced by students. With more donations from well-wishers, the library managed to come up with a basic collection for most subject by the end of the first month of the semester(SLS2) In a focus group discussion with library staff, it was noted that library staff sourced documents from government offices that were needed in the local collection (FGDLS).

From the findings, limited use of electronic resources due to lack of skills and infrastructure, limited printed resources, and a lack of reading spaces were

[10] Observation from authors

[11] Observation from authors

major challenges. In order to improve this, the librarians engaged in training students skills and increased hotspot area and internet bandwidth to improve connectivity. To increase resources, the librarians prioritized processing resources in response to curriculum needs. As for reading spaces, the librarians used teaching areas briefly before they were able to open an interim library

Conclusion and Recommendations

In conclusion, the Mzuzu University Library fire disaster provided the library with insights on how to handle different aspects during a disaster. This study revealed that when disasters strike, there are both challenges and opportunities for both library staff and students. Library staff had challenges of lack of space for storing and processing resources, lack of materials for processing materials, shortage of human resources, and time constraints and delays in procurement of resources while students faced challenges of inadequate learning resources, lack of reading spaces, and limited access to electronic resources due to lack of skills and poor connectivity. On the other hand, library staff had an opportunity to learn new skills, build team work, and acquire new and better resources while students also acquired new skills and developed a new culture of use of electronic resources for academic purposes.

However, what is clear is that there is need for institutions to come up with disaster plan to help in the process of disaster recovery to minimize any necessary delays. Further, the authors of this study recommend that in times of library disaster, librarians should take a leading role in advising management of issues of collection development and the information access environment. In addition, institutional leaders need to develop deliberate measures to avoid disasters of any form. Lastly, librarians need to introduce students to various sources of information and engage them to use them so that they develop confidence in all resources.

References

Adamo, C. (2016, March). Emergency preparedness and disaster response for a seminary library: Establishing collections priorities. *Catholic Library World,* 86(3), 164-173.

Adinku, S. (2005). Towards disaster preparedness and recovery planning procedures for libraries: A survey of staff and users of the Balme Library, University of Ghana. *South African Journal of Archival Information Science*, 15 (1), 75-79.

Ahenkorah-marfo, M. and Borteye, E, M. (2010, July). Disaster preparedness in academic libraries: The case of the Kwame Nkrumah University of Science and Technology Library, Kumasi, Ghana. *Library & Archival Security, 23* (2), 1-27.

Barkley, D. (2007, Fall). The University of New Mexico Zimmerman Library fire. *Documents to the People (Dttp)*, 35(3), 28-30.

Breeding, M. (2012, May). From disaster recovery to digital preservation. *Computers in Libraries,* 22-25

Creswell, J.W. (2014). *Research design: International student design: qualitative, quantitative and mix methods approaches*. 4th.ed. Thousand Oaks, CA: SAGE.

Eberhart, G.M. (2004, October). Germany Library fire destroys thousands of rare books. *American Libraries*, 35 (9), 12-12.

Hazlett, D.R. (2007, April). Disaster recovery. *Library Journal,* 45-46.

Hirst, D. (2008, December). The Iowa City Floods of 2008: A librarian and IT professional's perspective. *Information Technology and Libraries*, 5-8.

Holderfield, A. (2007). A library disaster. *Illinois Libraries,* 86 (4), 11-15.

McHone-Chase, S.M. (2010). The role of interlibrary loan in disaster preparedness and recovery. *Journal of Interlibrary Loan, Documents Delivery & Electronics,* 20, 53-60.

Ngulube, P. and Magazi, L. (2006, August). Protecting documents against disasters and theft: Challenges before public libraries in Kwazulu-Natal, South Africa. *South African Journal of Library & Information Science,* 72(3), 185-197.

Picardi, C.A. & Masick, K.D. (2014). Research methods: Designing and conducting research with a real-world focus. Los Angeles: SAGE.

Rattan, P. and Payare, L. (2012, January-March). Disaster management and electronic storage media: An overview. *International Journal of Information Dissemination and Technology*, 2 (1), 1-5.

Roberts, M. (2015). The Library without walls: Striving for an excellent law library service post-earthquake. *Legal Information Management*, 15, 252-260.

Stewart, A. (2014). When disaster strikes: Opportunities for community and institutional renewal at Elliot Lake Public Library. *Public Library Quarterly,* 33,304-329

Wilkinson, F.C. (2015, March). Emotional Intelligence in library disaster response assistance teams: Which competencies emerged? *College & Research Libraries,* 188-204.

Wong, Y.L. and Green, R. (2006). Disaster planning in libraries. *Journal of Access Services,* 4 (3), 71-81.

OPEN SCIENCE, OPEN DATA AND LIS AND THE SDGS

OPEN SCIENCE IN AFRICA: FOR WHAT AND WHOSE MANDATE?

Justin Chisenga
Capacity Development Officer
Partnerships and South-South Cooperation Division
Food and Agriculture Organization of the United Nations
Rome, ITALY

Abstract

Open Science encompasses a wide range of practices that include open data, open access, open research, citizen science, among others, largely focusing on facilitating easy access to publicly funded research. In Africa, the concept is relatively new and implementing Open Science initiatives can be complicated. Open Science is good for Africa. There are several benefits to be derived by stakeholders from opening the continent's science research process and outputs to the world. But, Open Science for what? And whose mandate is it to ensure that Africa pursues and derives maximum benefits from Open Science? This paper argues that Open Science initiatives should address the challenges faced by the continent and should support national and Africa wide development agendas. Governments should put in place policy frameworks for Open Science and mandate institutions that are coordinating science, technology and innovation (STI) research to lead national Open Science initiatives. Increased public funding for STI research is key to implementing successful Open Science initiatives. Africa is home to several opportunities that could spur investments in research.

Keywords: *Open science; Africa; Agenda 2063, STISA-2024.*

Introduction

Open Science encompasses a wide range of activities and this is reflected in most definitions of the term. The Organization for Economic Co-operation and Development (OECD) refers the term as:

> "efforts by researchers, governments, research funding agencies or the scientific community itself to make the primary outputs of publicly funded research results – publications and the research data – publicly accessible in digital format with no or minimal restriction as a means for accelerating research; these efforts are in the interest of

> enhancing transparency and collaboration, and fostering innovation" (OECD, 2015:7).

Open Science includes open access to scholarly publications, open data, and open and collaborative research (Mgwebi, 2016). Other activities under Open Science are open peer review, open research and stakeholder engagement or *Citizen Science*, in which non-specialists engage directly in research (European Commission, 2017a). Knack (2017:4) indicates that Open Science research process "*encourage openness, transparency and access to knowledge through research collaboration and participatory, bidirectional modes of interaction between researchers and society*".

In practical terms, Open Science is about:

- improved collaboration among stakeholders in the scientific research process and between countries to address shared challenges;
- increased understanding of and participation in science by the public (Citizen Science), thus taking "open science activities beyond the purview of professional scientists' circles" (Knack, 2017:4);
- enhanced access to research outputs such as reports, journal articles, research data, etc. on a 24/7 basis, and;
- ultimately enhanced impact of research.

Novel and innovative information and communication technologies (ICTs) have been key to Open Science. The United Nations Educational, Scientific and Cultural Organization (UNESCO) states that, "openness in obtaining, processing, publishing and disseminating research information becomes easily achievable due to spread of ICTs and ICT-enabled services" (UNESCO, 2015:3). ICTs have created new opportunities for the scientific community to publish research outputs, organize large data sets, speed up the transfer of knowledge, and involve citizens in the scientific research process.

Open Science is a new concept in Africa and implementing Open Science initiatives can be difficult and complicated. Open Science is good for Africa. However, to actively participate in the ever-growing Open Science movement and for it to have a positive impact on the livelihoods of the people, African governments should increase funding for research and development (R&D), Open Science should address the challenges facing the continent, and national and Africa-wide agencies with a mandate for R&D should lead Open Science initiatives. This paper provides some thoughts on these three issues, that are among several (e.g. building capacities of institutions and individuals, putting in place an enabling environment for Open Science, addressing researchers' concerns regarding open sharing of data, technical infrastructure, etc.) that need to be addressed for Open Science to flourish in Africa.

Public Funding for Research

Public agencies usually fund basic scientific research (Chesbrough, 2015: 8), but in Africa, in general, there is very little public funding for research and development. In addition, except for a few countries (e.g. Namibia and South Africa), there is practically no private investment in R&D (Marsh, 2016). Poor public and private funding for R&D could be one of the reasons for the low amount of research outputs from Africa that could be made accessible through initiatives such as open data and open access. Sub-Saharan Africa accounts for less than 1% of the world's research output (Blom, Lan & Adil, 2016) and 0.03 % of the world's research data (Onyancha, 2016). Not surprisingly, Sub-Saharan Africa also features badly on the Global Innovation Index (GII). The 2017 edition of the GII, focusing on the theme of innovation in agriculture and food systems, ranked the region last on the Index (Cornell University, INSEAD, & World Intellectual Property Organization [WIPO], 2017).

Africa largely relies on international partners to fund R&D. The continent needs to invest billions of dollars in science and technology to make any headway (Marsh, 2016). Governments should invest in R&D to drive the national and continental research agenda and ensure that it is responsive to the continent's development needs. There is an urgent need to accelerate investments, by both governments and partners, in developing capacities of scientists and research agencies to further increase research on solving African problems by Africans for Africans (Blom, Lan & Adil, 2016). Several high-level opportunities to spur African governments to invest in R&D are already in place.

Science, Technology and Innovation Strategy for Africa 2024

In June 2014, the Heads of State and Government of the African Union adopted the Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024) "to respond to the need of transforming Africa into a Knowledge-based and Innovation-led Society" (African Union Commission, 2014: 20). The strategy focuses on six socio-economic priorities, namely:

- Eradication of hunger and achieving food security;
- Prevention and control of diseases;
- Communication (Physical & Intellectual Mobility);
- Protection of our space;
- Live together – build the society;
- Wealth creation.

STISA-2024 recognizes that Africa has the potential to fund science, technology and innovation research and strongly urges Member States to allocate at least 1% of GDP to R&D "to ensure that Africa maximizes ownership and responsibility for its own developmental path" (African Union Commission, 2014: 41).

Although, there has been an increase in public funding for R&D, only Kenya with 0.8%, and Mali and South Africa, each with 0.7%, come anywhere near the 1% target (Montoya & Chalaud, 2016). STISA-2024 also recommends setting up an African Science and Technology Innovation Fund (ASTIF) and encourages Regional Economic Communities (RECs) to establish regional funds to support research in STISA-2024 priority areas "as well as cross-border research and innovation collaboration addressing common challenges" (African Union Commission, 2014: 42).

The Agenda 2063

The *2063 Agenda: the Africa we Want* of the African Union is a strategic framework for the socio-economic transformation of the continent adopted by the Heads of State and Government of the African Union at their 24th Ordinary Assembly in Addis Ababa, Ethiopia, held from 30-31 January 2015. The Agenda recognizes the key role of STI in achieving continental development goals. It commits the Heads of State and Government to speed-up actions to "catalyze education and skills revolution and actively promote science, technology, research and innovation, to build knowledge, human capital, capabilities and skills to drive innovations and for the African century" (African Union Commission, 2015: 14).

The 2030 Agenda for Sustainable Development

The 2030 Agenda for Sustainable Development calls for mobilization of resources and collaborative partnerships to end all forms of poverty, fight inequalities and tackle climate change, while ensuring that no one is left behind, to be achieved through 17 Sustainable Development Goals (SDGs) (United Nations, 2015). Developing countries are now using the SDGs to guide their development policies and programmes. The 2030 Agenda and the SDGs also provide another opportunity for African governments to invest in STI to contribute and accelerate the attainment of the SDGs on the continent. Specifically, this is highlighted in *SDG 9: Build Resilient Infrastructure, Promote Inclusive and Sustainable Industrialization and Foster Innovation* under which Target 9.5 encourages governments, especially in developing countries, to promote sustainable industrialization and innovation by increasing public and private spending on R&D and the number of researchers for every one million inhabitants.

Open Science for What?

Open Science has several benefits. Participants at the Open Science Leadership Forum, in 2017, identified the following as possible outcomes of successfully implemented open science initiatives (Ali-Khan, Jean & McDonald, 2017):

- Increased quality and efficiency of scientific outputs;

- Accelerated innovation and impact;
- Increased trust and accountability of the research enterprise;
- Increased equity in research;
- Better opportunities and recognition of early career researchers and youth.

Further, the European Commission (2017b:5) indicates that "broader access to scientific publications and data helps to:

- build on previous research results (improved quality of results)
- encourage collaboration and avoid duplication of effort (greater efficiency)
- speed up innovation (faster progress to market means faster growth)
- involve citizens and society (improved transparency of the scientific process)".

In Africa, Open Science should not be for its own sake and a prerogative of the scientific community. Open Science initiatives should be aligned with the needs expressed by African governments. They should respond to people's real needs and address the development challenges facing the continent. This concern was well articulated by participants at the East African Open Data Fest, in 2016, who, among others, asked the question: "*Does open data have any relevance to the daily bread and butter issues that African citizens face?"* (ICT Works 2016). Indeed, Open Science (or open data or open access) for what?

Africa is facing several challenges including climate change, diminishing land and water resources, youth unemployment and migration, post-harvest losses, HIV/AIDS, population growth, inadequate infrastructure, environmental degradation, and disease outbreaks. All these require innovative solutions and Open Science should contribute to the solutions. For example, opening access to clinical and epidemiological data during disease outbreaks could potentially transform and quicken the scientific and medical community's response to outbreaks (Yozwiak, Schaffner & Sabeti, 2015).

Open Science initiatives on the continent should be aligned with national or Africa wide development agendas to ensure ownership and sustainability. They should also complement initiatives being carried out under the Open Data for Development (OD4D) programme which governments are being supported to open access to their data to enhance transparency and accountability, and to facilitate public service delivery and citizen participation (Open Data for Development Network, 2016).

One off Open Science initiatives should be avoided. African governments and development partners should guarantee long-term commitment to Open Science and allocate resources. This, to a large extent, can be achieved by aligning Open Science initiatives to the continent's development agendas. The African Union's Agenda 2063, the Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods, the Comprehensive Africa Agriculture Development Programme (CAADP), the regional Economic Communities development plans (e.g. Southern African Development Community's Regional Indicative Strategic Development Plan) and national development plans, most of which have or are being aligned to the 2030 Agenda and SDGs, all offer huge opportunities for Open Science to make a direct impact on the lives and livelihoods of the people.

Open Science: Whose Mandate?

Open Science activities, whether at institutional, national or regional level, involve and affect a diversity of stakeholders. At the national level, these include government policy makers and their partners as research funders; researchers and scholars from different scientific domains as generators of knowledge and innovations; information and knowledge institutions (e.g. libraries, information centres, etc.) working to facilitate open access to research outputs especially research reports, research data, journal articles, etc.; ICT specialists to develop and maintain the technical infrastructure to support Open Science; and the interested public who include users of the research outputs. Therefore, multi-stakeholder approaches to Open Science should be adopted to forge a shared vision and ensure buy-in. Policy frameworks and guidelines for Open Science to help stakeholders to align their interests with the development agendas should also be put in place.

Open Science at the basic level focuses on publicly funded research, the underlying research data, and involves a diversity of stakeholders. Therefore, whose mandate should it be to ensure that it serves the needs and interest of the people and countries in Africa?

To flourish, Open Science in Africa should have support from the highest political and government levels and be driven from within Africa. For example, the European Commission backs policies that support increased public access to research and open access initiatives (Gewin, 2016). In the United States of America (USA), a Federal Government policy requires federal science agencies that spend more than USD 100 million per year in R&D to develop plans to increase public access to the results, especially peer-reviewed scientific publications and digital scientific data of federally funded research (White House Office of Science and Technology Policy [OSTP], 2013). In the United Kingdom, the government through its Innovation and Research Strategy for Growth supports, supports open access to publicly funded research (Department for Business Innovation Skills, 2011). Government support and involvement go a long way in aligning Open Science initiatives with the country's developmental goals and in facilitating sustainability of the initiatives.

The South African Department of Science and Technology (DST) and the country's National Research Foundation (NRF) are the leading public institutions supporting Open Science on the continent. They both support and fund Open Science initiatives in South Africa and at the continental level. DST and NRF are supporting the establishment of an African Open Science Platform to promote the value and exploit the potential of Open Data for science (CODATA, 2016). African needs continental and national agencies with the mandate to supervise and coordinate STI to be involved and to lead Open Science initiatives. Their involvement, in a way, would contribute to addressing some of the concerns by African scientists, including that "open data compromises national ownership and reopens the gates for 'parachute-research (i.e., Northern researchers absconding with data to their home countries)'" (Serwadda, et. al. 2018:642).

While non-state science organizations such as the African Academy of Sciences (AAS), Academy of Science of South Africa (ASSAf), the Council for the Development of Social Science Research in Africa (CODESRIA), to name a few, are already active in the Open Science movement on the continent, most public agencies that coordinate or fund research appear to be keeping a low profile. At the Africa-wide level, the Africa Union's Commission for Human Resources, Science and Technology, that also has a mandate to promote science and technology on the continent, should be leading the way and provide an Africa-wide policy framework on Open Science. At the national level, as seen in the case of South Africa, government Ministries responsible for science and technology should be playing a key role, and should be supported by national science and technology research agencies or councils. Research agencies/councils are key institutions in bringing about changes being proposed by Open Science movements, since they sponsor and facilitate research (Lithotomies, Kretz & Sá 2015). Examples of major national research organizations and agencies funding or coordinating research in Sub-Saharan Africa, include the following:

- Ghana: Council for Scientific and Industrial Research;
- Kenya: National Council of Science and Technology (NCST), Kenya Agriculture and Livestock Research Organization (KALRO), and the National Research Fund (NRF);
- Nigeria: Agricultural Research Council of Nigeria (ARC) and the National Research Institute for Chemical Technology (NRICT);
- South Africa: Council for Scientific and Industrial Research (CSIR) and the Human Sciences Research Council (HSRC);
- Tanzania: Tanzania Commission for Science and Technology (COSTECH);

- Uganda: Ugandan National Council for Science and Technology and the National Agricultural Research Organization (NARO);
- Zambia: National Council for Scientific Research, National Institute for Scientific and Industrial Research (NISIR) and the Zambia Agricultural Research Institute (ZARI).

Strategic leadership is key to Open Science in Africa and national and continental public agencies with a mandate for STI research should take a lead role and provide policy guidance on Open Science. They should also play a key role in advocating for reward mechanisms for researchers who make their publications, research data and methodology open for scrutiny. Otherwise the "publish or perish” syndrome will continue making it difficult for Open Science on the continent to receive unequivocal support from researchers, especially from young generation of researchers who are trying to establish themselves in an environment in which recognition is based on metrics such as publication in high-impact journals.

Conclusion

Open Science provides Africa with an opportunity to enhance its visibility on the global science stage. However, Open Science initiatives should not be pursued for their own sake. They should address the many challenges besieging the continent and ultimately contribute to improving the livelihoods of millions of Africans. Several opportunities, including STISA-2024, the Global 2030 Agenda for Sustainable Development and the African Union’s Agenda 2063 provide an opportunity for Africa to improve its STI sector. However, this would require increasing funding for STI research, putting in place enabling policy frameworks and strategies that support Open Science, adopting multi-stakeholder approaches, and having strategic leadership at national and Africa wide level to ensure that Open Science initiatives contribute to national and continental development agendas.

References

African Union. (2007) Assembly of the African Union, Eighth Ordinary Assembly, 29-30 January 2007, Addis Ababa, Ethiopia. Decisions and Declaration. https://au.int/sites/default/files/decisions/9556-assembly_en_29_30_january_2007_auc_the_african_union_eighth_ordinary_session.pdf [10 February 2018].

African Union Commission. (2014) *Science, Technology and Innovation Strategy for Africa 2024*. Addis Ababa: African Union Commission.

African Union Commission. (2015) *The 2063 Agenda: the Africa we Want*. Addis Ababa: African Union Commission.

Ali-Khan, S. E.; Jean. A. & MacDonald, E. (2017) 'Defining Success in Open Science: A Report from the Leaders' Forum, Washing DC. October 5 - 7, 2017' https://www.gatesfoundation.org/~/media/GFO/How-We-Work/Defining-success-in-OS_20180209.pdf?la=en [accessed12 February 2018].

Blom, A., Lan, G. & Adil, M. (2016) *Sub-Saharan African Science, Technology, Engineering, and Mathematics Research: A Decade of Development*. Washington, DC: International Bank for Reconstruction and Development/The World Bank.

Chesbrough, H. (2015) *From Open Science to Open Innovation*. Brussels: Science Business Publishing.

CODATA. (2016) 'African Open Science Platform to Boost the Impact of Open Data for Science and Society' Media Release, 9 December 2016. http://www.codata.org/uploads/African%20Open%20Science%20Platform%20 Media%20Release-16-12-09.pdf [accessed 18 February 2018].

Department for Business Innovation Skills. (2011) *Innovation and Research Strategy for Growth*. London: Department for Business Innovation Skills.

European Commission (2017a) *Evaluation of Research Careers Fully Acknowledging Open Science Practices: Rewards, Incentives and/or Recognition for Researchers Practicing Open Science*. Brussels: European Commission.

European Commission (2017b) 'H2020 Programme: Guidelines to the Rules on Open Access to Scientific Publications and Open Access to Research Data in Horizon 2020' http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf [accessed 16 February 2018].

Fecher, B. & Friesike S. (2014) 'Open Science: one term, five schools of thought' In: Bartling S., Friesike S. (eds) *Opening Science: The Evolving Guide on How the Internet is Changing Research, Collaboration and Scholarly Publishing*. Berlin: Springer. pp17-47.

ICT Works (2016) 'How Do We Make Open Data Useful in East Africa?' http://www.ictworks.org/2016/10/26/how-do-we-make-open-data-useful-in-east-africa/ [accessed 15 February 2017].

Cornell University, INSEAD, & WIPO (2017) *The Global Innovation Index 2017: Innovation Feeding the World*. 10th ed. Ithaca: Cornell University.

Gewin, V. (2016) 'Data Sharing: An Open Mind on Open Data' *Nature* 529. 7 January 2016, pp.117-119.

Knack, A. (2017) Open Science: *The Citizen's Role in and Contribution to Research*. Santa Monica, Calif.: RAND.

Lasthiotakis, H., Kretz, A. & Sá, C. (2015) 'Open Science Strategies in Research Policies: A Comparative Exploration of Canada, the US and the UK' *Policy Futures in Education*, 13(8) pp, 968-989.

Marsh, K. (2016) 'How Africa Can Close its Continent-wide Science Funding Gap' *The Conversation*, April 12. https://theconversation.com/how-africa-can-close-its-continent-wide-science-funding-gap-55957 [accessed 7 February 2018].

Montoya, S. & Chalaud, D. (2016) 'How Much Does Your Country Invest in Research and Development (R&D)?' *UNESCO Institute for Statistics Blog*, September 14. https://sdg.uis.unesco.org/2016/09/14/how-much-does-your-country-invest-in-research-and-development-rd/ [accessed 8 January 2018].

Mgwebi, T. (2016) 'Open Access, Open Data, Open science' *Mail & Guardian*, 9 December 2016. https://mg.co.za/article/2016-12-09-00-open-access-open-data-open-science [accessed 9 February 2018].

Nording, L. (2017) 'African scientists get their own open-access publishing platform' *Nature*. 15 November 2017 https://www.nature.com/news/african-scientists-get-their-own-open-access-publishing-platform-1.23018 [accessed 13 February 2018]

OECD. 2015 *Making Open Science Open*. Paris: OECD.

Onyancha, O. B. (2016) 'Open Research Data in Sub-Saharan Africa: A Bibliometric Study Using the Data Citation Index' *Publishing Research Quarterly* 32(3), pp. 227-246.

Open Data for Development Network. (2016) *Open Data for Development: Building an Inclusive Data Revolution - Annual Report 2015*. Ottawa, Canada: IDRC.

Park, P. (2015) 'Funding Research in Africa' *The New Scientist*, January 1. https://www.the-scientist.com/?articles.view/articleNo/41683/title/Funding-Research-in-Africa/ [accessed 8 January 2018].

OSTP. (2013) Memorandum for the Heads of Executive Departments and Agencies. https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf [accessed 17 February 2018].

Serwadda, D.; Ndebele, P.; Kate Grabowski, M.; Bajunirwe, F. & Wanyenze, R.K. (2018) 'Open Data Sharing and the Global South - Who Benefits?' *Science* 359, pp. 642-643.

UNESCO. (2015). *Concepts of Openness and Open Access*. Paris: UNESCO.

United Nations. (2015) *Transforming our world: the 2030 Agenda for Sustainable Development*. New York: United Nations. [A/RES/70/1].

Yozwiak, N.L., Schaffner, S.F. & Sabeti, P.C. (2015) 'Make Outbreak Research Open Access' *Nature* 518, 26 February 2015, pp. 477-479.

TECHNOLOGICAL ADVANCES IN LIBRARY WORK AS A CATALYST FOR CHANGING ROLES OF LIBRARIANS AT THE UNIVERSITY OF NAIROBI

Mildred A Otiango
University of Nairobi
and
Omwoyo Bosire Onyancha
University of South Africa, Department of Information Science

Abstract

The study investigated the effect that technological advancements and introduction in library services and functions have had on the duties and responsibilities of academic librarians at the University of Nairobi. The study employed a quantitative approach whereby a survey research design was adopted. Purposive sampling was used to select respondents from each of the 11 libraries. Data was collected using a questionnaire and interview schedule. A total of 70 librarians were targeted with questionnaires but only 54 of them responded to the questionnaire. A semi-structured interview was also conducted with the library director, three deputy librarians and twelve librarians who preferred the interviews to completing the questionnaire. The study found that changes that have taken place in service provision as well as functions within the UoN library, largely due to the emergence of the information and communication technologies (ICTs), have impacted on the manner in which librarians at the said library perform their duties thereby bringing some changes to the librarians' roles. Some librarians have taken up some new roles in the library's pursuit of serving users. We recommend that librarians should undergo continuous training to acquire new skills and competencies in order to stay abreast with the evolving nature of their work.

Keywords: *Librarianship; Information and communication technologies; library services; Kenya; Academic libraries.*

Introduction

For a long time, librarians were only custodians of library collections. This is based on the fact that for many centuries, book collecting was an opportunity either to display one's wealth or the result of scholarship (Olivia, 2007). Many people did not understand the work of librarians because librarians were simply looked at as custodians of the chained books (Deegan & Tanners, 2002). It was not until the nineteenth century that library collections became more universally available and library science began to codify standards for describing and organizing resources and libraries began to move beyond merely keeping and preserving books (Olivia, 2007). Even Melville Dewey wrote in an early edition of the Library journal that "it is not enough that books are cared for properly, are well arranged, are never lost …(The librarian) must put every facility in the way of the readers so that they shall be led on from good to better. He must teach them how, after studying their own wants, they may themselves select their reading wisely'' (Olivia, 2007).

Elkin (2005) describes a traditional librarian as a person located in the library building carrying out the tasks like acquiring, organizing, preserving the printed documents besides helping the readers to locate the information they need. Crawford and Gorman (2005) define the role of the librarian today as;-"to acquire, organize, and give access to and safeguard carriers of knowledge and information in all forms and provide instruction and assistance in the use of all the collections to which their users have access". The Online Dictionary of Library and Information Science (2005) define a librarian as an information professional trained in library and information science and is engaged in library service which is the organization and management of information services or materials for those with information needs. These definitions provide an indication of the roles which librarians have assumed during the final half of the twentieth century. They acquire information resources relevant to their user population in whatever format available; they organize the information within the library collection; they provide means for users to access that information; and they educate users in accessing and interpreting information resources. Librarians are now moving beyond the traditional roles of collection, maintenance and custodial duties to wider functions of translating, accessing and marketing resources beyond the walls of the physical library building.

With the emergence of information technology (for example the internet), it was thought that librarians would be rendered obsolete. Ramos (2007) predicated that the electronic age would wipe public bookshelves clean and permanently end the centuries old era of libraries. He also viewed the future of libraries and consequently librarians as determined by technology, and therefore predicted a diminished role for both libraries and librarians in the future (Ramos, 2007). Janice (2006), too, noted that rather than rendering the librarian obsolete, the digital revolution has made librarianship more essential because of the librarian's ability to link users with information resources and providing services where and when needed. Obadare (2004) observed that as the information explosion continues, everyone will need more help finding, sorting and filtering the available materials and that will be the work of the librarian. Elkin (2005), on the other hand, observes that the librarian makes a significant contribution, often defining the search, honoring the researcher's goals and helping the researcher to understand their needs. She believes the value of human expertise, judgment and empathy are integral to the development of the electronic library environment. Deegan & Tanner (2002) observe that the public image of librarians remain poor and distinctly old fashioned, while technologies lay claim to so-called electronic libraries that will apparently replace place-based librarians with a few key-strokes.

Melchionda (2007) describes the changing role of librarians as partly attributed to the consequences of new technologies and information developments. To start with, universities and colleges are investing in providing improved teaching and distance learning resources via electronic media. This calls for librarians to increase their technical knowledge, ability and skills in order to perform their demanding duties and responsibilities.

Problem statement

Today, librarians are confronted with new roles in their pursuit to serve library clients who whose needs are ever changing, a situation that requires practical and technical skills, professional competencies and ability to perform and to constantly be in touch with those emerging technologies to stay afloat. These dynamic roles have been necessitated partly by technological developments. This paper poses one main question which the research problem under investigation in this study. What are the over-arching implications of the introduction of information and communication technologies in the University of Nairobi's library and its branches vis-a-viz the role of librarians? The sub-questions, which inform the main research, question includes the following: what library functions and services have been affected the most with the adoption and use of ICTs in the library? Have the duties and responsibilities of librarians become more or less complex as a result of the introduction of ICTs in the library? Which skills and competencies are required for information age librarian to effectively perform his/her duties and responsibilities?

Purpose of the Study

The purpose of the study is to examine the extent that the evolution of the library work has changed the role of librarians and how this changing roles of academic librarians at the University of Nairobi and its other constituent colleges in context of the current information age.

In view of the above-mentioned purpose, the study seeks to address the following objectives in the context of the University of Nairobi and its constituent college libraries:

- Determine the extent to which library functions as well as processes have changed in the current information age by:
    - Assessing the nature of services available to and offered by the respondents at the start of their work
    - Examining the library user services offered by respondents when they were first employed
    - Determining the library functions and other library services that have been discontinued in the library

- Explore the changes in librarians' responsibilities over the last 10 years
- Assess the complexities associated with the current duties and responsibilities of librarians at the UoN
- Find out the competencies and skills required of librarians in the current information age
- Determine the effect of information and communications technologies (ICTs) on the roles of librarians

Research methodology

The current study largely followed a quantitative research approach with a survey being adopted as the main research design, but qualitative data was sought to explain the quantitative data. As the title clearly indicates, the area of study was the University of Nairobi's main library and its constituent branch libraries, totaling ten (10). School of Law library; Institute for Development Studies library; Population Studies and Research Institute library; Institute of Anthropology Gender and African Studies library; Architecture, Design and Development studies library; Medical School library; Kabete campus library; Kikuyu campus library; and the Chiromo campus library. As at the time of conducting the current study, there were a total of 155 library workers at the University of Nairobi and its constituent college libraries. However, the current study targeted a total number of 124 trained library workers who included the library director and three deputy library directors. The 124 trained library workers have acquired some kind of training in library and information science ranging from certificate level to PhD level (University of Nairobi Staff Establishment 2010), hence their inclusion in the study. A total of 70 library workers were targeted to complete the questionnaire, having excluded ten (10) library attendants who were certificate holders, 20 library workers who were on leave at the time of conducting the study and 14 librarians who opted for interviews instead of completing the questionnaire. Out of the 70 librarians who accepted and received questionnaires, only 54 returned completed questionnaires, thereby registering a response rate of 77.1%. A self-administered questionnaire consisting of closed-ended questions and a few open-ended questions was distributed to the 70 respondents by the researchers. On its part, the interview method of data collection employed the face-to-face type of interviews, using a semi-structured interview schedule to collect data from the 15 participants.

Results and Discussions

The results and discussions are offered in line with the themes reflected in the research objectives as follows:

- Extent to which library functions as well as processes have changed in the current information age
    - Nature of services available to and offered by the respondents at the start of their work

    - Library user services offered by respondents when they were first employed
    - Library functions and other library services that have been discontinued in the library
- Changes in librarians' responsibilities over the last 10 years
- Complexities of duties and responsibilities
- Competencies and skills required of librarians in the current information age
- Effects of information and communications technologies (ICTs) on the roles of librarians

Respondents' Profiles

The findings revealed that majority of respondents at the UON and its constituent college libraries were male. Out of the 54 library staff who participated in the study, 28(51.9%) were male while 26(48.1%) were female. Age-wise, many respondents, i.e. 17(31.5%), were in the age range of 41 to 50 years followed by those who were in the age range of above 50 years (i.e. 16 or 29.6%). Fifteen (27.7%) respondents were in the age range of 31-40 years while the minority of respondents, i.e. 6 (11.1%), was below 30 years of age. The distribution of the staff members at the libraries shows a mixture of employees in terms of age, which may imply a broad spectrum of experience.

In terms of the respondents' job titles, the majority of respondents who numbered 34(63.0%) went by the title library assistants, 13(24.1%) respondents were senior library assistants, 4 (7.4%) work as librarians; senior librarians totaled 2(3.7%) while library attendants constituted a minority of 1(1.9%). These titles do not necessarily reflect the changes in the employees' work and responsibilities. The titles have been in existence for a long time. Apparently, therefore, the titles have remained the same over time.

The other item that was required of the respondents as far as building their profiles for this study was concerned is Professional qualification. Twenty-three (42.6%) respondents had diplomas, 16(29.6%) had degrees while 14(26.0%) had masters degree. Postgraduate diploma constituted a minority of 1(1.9%) respondent. The respondents had been provided with the option of PhD but none of them selected the qualification, implying that none of the respondents had attained a PhD qualification at the UoN library. Respondents were also asked to indicate the years they have worked in their respective libraries as a way of assessing their work experience. The findings revealed that the majority of the respondents numbering 22(40.7%) had worked in the library for over 15 years, followed by 17(31.5 %) respondents who had worked for less than 5years. Ten (18.5%) respondents had worked in the library for between 11 and 15 years while the minority totaling 5(9.3%) had worked for between 5 and10 years.

Finally, in the development of the respondents' profiles, respondents were asked to indicate their experience in the library environment in terms of years they have worked in the sector. The findings revealed that most of the respondents who numbered 30(55.6%) had a work experience of over 15 years followed by 9(16.7%) who had a work experience of between 2 and 5 years while 7 (13.0%) had worked for 6-10 years. The minority that is 1(1.9 %) person had a work experience of less than 2 years.

Extent to which library functions as well as processes have changed in the current information age

Respondents were asked to state the extent to which library functions and processes have changed over time in terms of the nature of services conducted by respondents at the start of their work at the UoN library; library services available to employees at the start of their career; library functions and other library services that have been discontinued in the library; how library functions/services have changed over time; changes in librarians' responsibilities over the last 10 years; complexities of duties and responsibilities and time spent on discharging duties and/ or responsibilities

Nature of services available to and offered by the respondents at the start of their work

Table 1 and 2 provide the results on the nature of collection development and technical services that they encountered when they first joined the UoN library. A majority of the respondents who numbered 48 (88.9%) indicated that they encountered manual acquisition of print books while a similar number 48 (88.9%) indicated that they had manual subscription of journals and a further 45 (83.3%) respondents selected the manual subscription of library newspapers as one of the activities that they found in place when they were first employed in the sector. Table 1 below provides a summary of the findings.

Table 1: Nature of services available to and conducted by the respondents at the start of their work (N=54)

Information resources	Frequency	Percentage (%)
Manual acquisition of print library books	48	88.9
Manual subscription of journals	48	88.9
Manual subscription of library newspapers	45	83.3
Manual subscription of periodicals	41	76.0
Acquisition of CD ROMS	28	51.9

Acquisition of Compact Disks (CD)	17	31.5
Online subscription of periodicals	12	22.2
Online acquisition of library books	11	20.4
Online subscription of journals	11	20.4
Acquisition of digital books	10	18.5
Online subscription of newspapers	4	7.4

Table 2: Technical services available to the respondents at the start of their work (N=54)

Technical services	Frequency	Percentage (%)
Manual cataloguing and classification of library materials	52	96.3
Manual indexing of library materials	44	81.5
Manual abstracting of information materials	43	79.6
Online cataloguing and classification of library materials	13	24.1
Online indexing of library materials	6	11.1
Online abstracting of information materials	4	7.4

It can be summed up that most services and functions in the library during the period the respondents were employed for the first time were largely conducted manually. Comparing the available resources today and the resources that were available to the respondents when they started work, there is an indication that the functions as well as processes and procedures have changed in view of the current information age and given the shift from manual based to electronic based functions. Nevertheless, there are those staff members who started working when those services were already automated but that constitutes the minority. A study conducted by Ticker (2009) reported that before the advent of computer and communication technology (ICT) in India, the academic library services were manual while the library collections were print dominant. This pattern calls into question the type of skills required on the part of librarians. It has been observed by Orme (2008) that today's library and information professionals need to be multi-skilled in order to respond to the changing demands of the working environment and make the most of the opportunities available.

Library user services offered by respondents when they were first employed

Traditionally, the main function of libraries was to offer circulation services, interlibrary loans, and library instruction, among other services. Users had to physically visit the library building to acquire services such as registration, borrowing and returning information materials, make book reservations, reference service, indexing and abstracting, selective dissemination of information (SDI) and current awareness service (CAS) just to mention a few. In view of the aforementioned, the respondents were asked to identify, from a list, the library user services that they encountered when they were first employed in the sector. The findings revealed that 54(100.0%) encountered registration and identification of library users as well as lending and returning of information materials. This was followed closely by Fifty-three (98.1%) respondents who indicated that they had interlibrary loan services while 49(90.7%) revealed that manual catalogue was in existence when they were first employed in the sector. Forty-eight (88.9 %) respondents selected face-to-face reference while user education and weeding of information materials were each selected by 46 (85.2%) respondents as shown in Table 3.

Table 3: Library services available to the respondents at the start of their work (N=54)

Library services	Frequency	Percentage (%)
Registration and identification of library users	54	100.0
Lending and returning of information materials	54	100.0
Interlibrary loan service	53	98.1
Manual catalogue	49	90.7
Face to Face reference	48	88.9
User education	46	85.2
Manual weeding of information materials	46	85.2
Manual stock taking	45	83.3

Current Awareness service (CAS)	43	79.6
Reservation/Recall service	40	74.1
Marketing of library resources	33	61.1
Selective dissemination of information	30	55.6
Information literacy	26	48.1
Bibliographic instruction	26	48.1
Ask the librarian service	23	42.6
Searching of electronic databases	16	29.6
E-mail service	15	27.8
Online public access catalogue (OPAC)	15	27.8
Online reference services	15	27.8
Online searches	14	26.0
Internet training to library users	11	20.4
Electronic stock taking	7	13.0
Instant messaging to library users	5	9.3
LinkedIn service	3	5.6
Electronic weeding of Information materials	2	3.7

It is safe to say that, as was the case with collection development and technical services, the library services that were present at the time when the respondents started working in the sector were largely offered manually. This contributed to slow delivery of services as opposed to services that are now being offered electronically. Information Literacy was encountered by slightly less than half of the respondents, and was also known by other names such as orientation, library education and tours, etc which took the form different from information literacy. Library instruction programs are offered to improve the students' ability to use library collections and services effectively. This includes the full range information and knowledge resources (ACRL, 2010). Delivery of information literacy instruction to students has become progressively more important due to proliferation of electronic resources and the increased usage of the internet as an information source. Librarians now play a more important teaching role; directing students to high quality print and electronic sources and educating them on the need to evaluate Web resources. This finding supports that of Li et al's (2007) suggestion that librarian's shift of focus from providing technical assistance on using library resources to user education has assisted students in developing information literacy skills to identify the information needed, locate it, evaluate and use that needed information effectively.

Library functions and other library services that have been discontinued in the library

According to the findings in Table 4, the majority 40(74.1%) of the respondents reported that the manual subscription of journals has been discontinued followed by 33(61.1%) respondents who selected manual subscription of periodicals while 27(50.0%) indicated that acquisition of Compact Disks (CD) has been discontinued. Twenty-three (42.6) respondents reported that CD ROMS no longer exist in their libraries.

Table 4: Library functions that have been discontinued in the library (N=54)

Information resources	Frequency	Percentage (%)
Manual subscription of journals	40	74.1
Manual subscription of periodicals	33	61.1
Acquisition of Compact Disks (CD)	27	50.0
Acquisition of CD ROMS	23	42.6
Manual acquisition of print library books	18	33.3
Online subscription of journals	5	9.3
Online subscription of newspapers	4	7.4
Online acquisition of library books	0	0.0
Acquisition of digital books	0	0.0
Manual subscription of library newspapers	0	0.0
Online subscription of periodicals	0	0.0

The analysis of the results indicates that most of the functions which have been discontinued are basically manual apart from the acquisition of CDs. This, we believe, reflects how the roles of the librarian have changed from manual based services/roles to electronic based services/role. Respondents were asked which library services have been discontinued in their libraries and gave the responses as shown in Table 5. The majority, forty-six (85.2%) respondents, said that the manual catalogue has been discontinued and replaced by online public access catalogue. Also discontinued was manual stocktaking which is being done electronically and was reported by 33(61.1%) respondents. Manual subscription of journals has been discontinued due to the fact that most journals are going online as well as most companies require payments through online means. This also applies to manual subscription of periodicals. Eight (14.8%) reported that interlibrary loan service and bibliographic instructions have been discontinued respectively. Seven (13.0%) respondents discontinued manual weeding of information materials while 3(5.6) indicated face to face reference, reservation/recall service3 (5.6) and selective dissemination of information3 (5.6) have also been discontinued. A further 2(3.7%) respondents indicated information literacy and user education, 2(3.7%) have been discontinued however I disagree with the discontinuation of these two because library users must be taken through user education programme and taught information literacy to enable them find their way within the library while the minority numbering 1(1.9%) respondents indicated that internet training to library users, current awareness service1(1.9%) and marketing of library resources1(1.9%) have been discontinued. No one selected registration and identification of library users, lending and returning of information materials, e-mail service, online searches, OPAC, online reference services, searching of electronic databases, instant messaging, LinkedIn service, electronic stocktaking, electronic weeding of information materials and Ask the librarian service as library services which have been discontinued. A follow up question was posed to the respondents to further find out if there was any other service that had been discontinued but was not provided for in the questionnaire. Manual taking of statistics was indicated but the same is being carried out electronically. Observably, the services have not ceased, but what has changed is the way those services are being offered from manual based to electronic based. CD-ROMs have been discontinued because the emergences of new technologies are not compatible with the way services were offered before.

Table 5: Library services, which have been discontinued (N=54)

Library services	**Frequency**	**Percentage (%)**
Card catalogue	46	85.2

Manual stock taking	33	61.1
Interlibrary loan service	8	14.8
Bibliographic instruction	8	14.8
Manual weeding of information materials	7	13.0
Face to Face reference	3	5.6
Reservation/Recall service	3	5.6
Selective dissemination of information	3	5.6
Information literacy	2	3.7
User education	2	3.7
Internet training to library users	1	1.9
Current Awareness service (CAS)	1	1.9
Marketing of library resources	1	1.9
Registration and identification of library users	0	0.0
Lending and returning of information materials	0	0.0
E-mail service	0	0.0
Online searches	0	0.0
Online public access catalogue (OPAC)	0	0.0
Online reference services	0	0.0
Searching of electronic databases	0	0.0
Instant messaging to library users	0	0.0
LinkedIn service	0	0.0

Electronic stock taking	0	0.0
Electronic weeding of Information materials	0	0.0
Ask the librarian service	0	0.0

From the findings, there is evidence that the manual catalogue has been discontinued and replaced by OPAC. However the librarians observed that the manual catalogue acts as a back up when the OPAC system is off. Stocktaking is now being done electronically. As for information literacy, it seems like librarians have not embraced it as we had hoped. As argued by Heidi and Genius (2009) who has been quoted as saying that while instructional work is important, librarians are not universally accepting their instructional roles. Heidi and Genius go further to say that previous research suggests ambivalence, and sometimes hostility, towards instruction, and in particular academic librarians who have been interviewed concerning their relative responsibility for teaching information literacy, interviews have revealed a degree of discomfort with instructional work arising from insufficient preparation, insufficient resource allocation and dislike for teaching (Heidi and Genius, 2009).

Respondents were asked to indicate the technical services that had been discontinued in their libraries. Forty-two (77.8%) respondents named manual cataloguing and classification of library materials, 37(68.5%) respondents selected the manual indexing of library materials while 35(64.8%) said that manual abstracting of information materials have been discontinued. It was surprising to note that online cataloguing and classification of library materials as well as online abstracting of information materials were selected as having been discontinued. In our opinion, these services would not have been selected because currently, they form part of the automated services. There is a possibility that the few respondents who selected those services may have not understood the question.

Changes in librarians' responsibilities over the last 10 years

Mohsenzadeh and Moghaddam (2008) explain that rapid developments in ICTs and their wide applications in all aspects of everyday life have led to dramatic changes which have not been observed before. Nyamboga & Kemparaju (2002) and Webster (2009) corroborates with Mohsenzadeh and Moghaddam's statement by saying that information technology has entered into libraries especially academic and research libraries to speed up their daily activities and reduce their operation costs. Godden (1991) argues that information and communications technologies (ICTs) have induced paradigm shift in libraries which include the shift from traditional libraries to digital libraries, print on paper to digital information, use of online classification schemes, card catalogues to web based OPACs, circulation services have changed from traditional charging and discharging to remote login, to use of RFID machines. These changes imply that there is either an increase or a decrease in the volume of responsibilities. Table 6 provides responses on whether or not the volume of certain functions/services has increased. Seemingly, the amount of work may have increased or decreased depending on a number of factors such as automation of services and functions, staffing, experience of personnel, and introduction of new functions or services, among others. Automation may play a part, for instance, as there could be a decrease in responsibility for some functions like cataloguing and classification which was selected by 12 (22.2%) respondents each, probably because of less print materials for processing given the subscription of e-journals and e-books. The same may apply to the work put into interlibrary loan services, which has somewhat decreased because of online lending and librarians don't have to move physically from one library to another. The amount of responsibility on stocktaking and indexing was reported as having decreased. Some respondents said that the volume of responsibility has increased because librarians now have to liaise with faculties and class representatives to discuss library matters, attend board meetings, search information online for the users, organize library orientation and information literacy classes, and respond to emails from resident lecturers who consult on various matters through the librarians phone when need arises.

Table 6: Increase or decrease in responsibility over the last 10years in terms of functions performed in the library (N=54)
Key: GI - Greatly Increased SI - Somewhat Increased NO - No Change SD - Somewhat Decreased
GD - Greatly Decreased N/A - Not Applicable

Function/ service	GI		SI		NO		SD		GD		N/A	
	F	P (%)	F	P (%)	F	P (%)	F	P (%)	F	P (%)	F	P (%)
Acquisition	13	24.1	18	33.3	3	5.6	11	20.4	8	14.8	1	1.9
Cataloguing	12	22.2	12	22.2	2	3.7	15	27.8	12	22.2	1	1.9
Classification	12	22.2	12	22.2	2	3.7	15	27.8	1	22.	1	1.9

									2	2		
Indexing	3	5.6	8	14.8	11	20.4	10	18.5	16	29.6	6	11.1
Abstracting	2	3.7	9	16.7	1	1.9	11	20.4	13	24.1	7	13.0
Access to catalogue	28	51.9	5	9.3	4	7.4	5	9.3	9	16.7	3	5.6
Reference services	22	40.7	11	20.4	4	7.4	8	14.8	7	13.0	2	3.7
Information literacy	25	46.3	14	26.0	3	5.6	8	14.8	3	5.6	1	1.9
Registration & identification of users	20	37.0	10	18.5	4	7.4	8	14.8	11	20.4	1	1.9
User education	27	50.0	12	22.2	3	5.6	8	14.8	2	3.7	2	3.7
Charging & discharging	17	31.5	9	16.7	3	5.6	10	18.5	10	18.5	5	9.3
Interlibrary loan	2	3.7	6	11.1	9	16.7	23	42.6	8	14.8	6	11.1
Reservation/ recall service	4	7.4	8	14.8	12	22.2	21	38.9	8	14.8	1	1.9
Stocktaking	3	5.6	6	11.1	11	20.4	13	24.1	16	29.6	5	9.3
Weeding of materials	2	3.7	10	18.5	20	37.0	7	13.0	9	16.7	6	11.1
Bibliographic instruction	7	13.0	18	33.3	6	11.1	14	26.0	7	13.0	2	3.7
Literature searches for clients	25	46.3	11	20.4	4	7.4	5	9.3	8	14.8	1	1.9

Library orientation	27	50.0	13	24.1	8	14.8	5	9.3	0	0.0	1	1.9
Current Awareness Service	21	38.9	11	20.4	8	14.8	9	16.7	3	5.6	2	3.7
Selective dissemination of Information	21	38.9	6	11.1	13	24.1	11	20.4	4	7.4	3	5.6
Marketing of library resources	25	46.3	8	14.8	8	14.8	9	16.7	3	5.6	1	1.9
Ask the librarian service	16	29.6	12	22.2	6	11.1	14	26.0	1	1.9	5	9.3
Instant messaging to users	26	48.1	9	16.7	6	11.1	5	9.3	4	7.4	4	7.4
Internet training of library users	26	48.1	9	16.7	6	11.1	6	11.1	3	5.6	4	7.4
Use of E-mails	30	55.6	12	22.2	1	1.9	6	11.1	2	3.7	3	5.6
Online searches	34	63.0	10	18.5	2	3.7	6	11.1	1	1.9	1	1.9

Complexities of duties and responsibilities

When asked to state on whether or not their duties/responsibilities have become more or less complex, many librarians, i.e. 19 (35.2%), indicated that duties and responsibilities have not become any more complex than they have always been while 17 (31.5%) indicated that duties and responsibilities have become somewhat complex when compared to the past. Ten (18.5%) respondents agreed that duties and responsibilities were complex while 8 (14.8%) believe that duties/responsibilities have become very complex. The interviews conducted with the library directors, however, revealed that complexities of duties/responsibilities for librarians could be attributed to additional duties of co-coordinating and streamlining of extra mural centers alongside running their major branch libraries**.** Others attributed complexities to teaching of information literacy, which was quoted as an issue of concern. Another complexity was associated with giving feedback to users who pose questions through "Ask the librarian service". Usually users expect feedback at earliest time possible and where feedback is delayed, it casts doubt on the librarian's capability and ability regardless of how much he is dealing with**.**

The librarians were further asked to state the approximate time spent on discharging duties/responsibilities as a way of determining on whether changes in their work can be associated to the time of completing tasks or discharging their duties and responsibilities. The findings revealed that the majority, 36(66.7%), of the respondents indicated that they spent less time discharging their duties/responsibilities, 15(27.8%) felt that more time was spent discharging duties/responsibility, 1(1.9%) respondent was undecided while another 1(1.9%) did not know whether or not he/she spent more or less time discharging his/her duties. We aver that spending less or more time in discharging duties/responsibilities highly depends on the task that each librarian is handling and the level of training that one has acquired to carry out that task in an electronic environment. Librarians who are conversant with the library management software may require less time discharging their duties/responsibilities while those who are still in a learning phase may require more time. Also, depending on the hours in which librarians are supposed to work, they may find themselves working for extra hours due to the nature of the duties that may require more time to accomplish.

A follow up question was asked to gauge on whether the respondents would require more or less time to execute their duties/ responsibilities in the information age. The majority, numbering 29(53.7%), respondents stated that they needed more time to execute their duties/responsibilities, 21(38.9%) believed that they needed less time, 2(3.7%) were undecided and 2(3.7%) did not know whether or not they needed less or more time to discharge their duties/responsibilities. It can therefore be argued that whether librarians needed more or less time to execute their duties/responsibilities depends on a number of factors such as the number of tasks they are expected to perform, their competencies and skills, and work experience, among others. As mentioned above, it also depends on the familiarity of the librarian with the library management and automation software and the level of training notwithstanding.

Competencies and skills required of librarians in the current information age

This section discusses the findings obtained from respondents in respect to the most valuable competencies and skills that were required prior to the introduction of ICTs; competencies and skills that have increasingly become important after the introduction of ICTs; extent to which various competencies and skills have improved the provision of services; and finally, how librarians' competencies and skills have changed over time.

Different authors have defined competencies in somewhat different ways. Dessler (2008) defines competencies as a demonstrable characteristic of the person that enables performance of a job. Competencies as defined by Evaul (2007) are a combination of skills, knowledge and behavior patterns vital to organizational success, personal achievement and career development. On the other hand, skill as defined by the Business Dictionary (2012) is an ability and capacity acquired through deliberate, systematic and sustained effort to smoothly and adaptively carry out complex activities or job functions involving ideas (cognitive skills), things (technical skills), and or people (interpersonal skills). Elkin (2008) argues that it is widely agreed that both professional and generic skills are essential to the librarian and other information professional; traditional skills need enhancing by IT, management and leadership skills, allied to significant personal skills. To achieve this, Partridge and Hallam (2004) note that the librarians and other information professionals therefore need to acquire and develop both sets of skills throughout their career. These then can be applied in a wide range of environments, both traditional and non-traditional, enabling the individual to adapt and respond to changing circumstances (Brine, 2004). In view of Orme's (2008) observation that there is considerable need to research on the existing skills and competencies required by librarians and other information professionals; by first examining their functions and roles, the current study found that the most valuable competencies and skills in the libraries before the introduction of ICTs were basic principles of librarianship and more so, organization of recorded knowledge, knowledge of information resources and the foundations of the profession as well as competencies in the area of reference and user services. Thirty-two (59.3%) respondents felt that competencies in administration and management were also valuable. It was not surprising to find that majority of respondents, numbering 51(94.4%), indicated that communication skills was the most valuable skill before the introduction of ICTs in libraries followed by information retrieval skills, cataloguing and classification skills. Other librarians indicated listening skills were the most valuable skills while others selected decision-making skills. These skills are still regarded as important for librarians to execute their duties and responsibilities.

The emergence of ICTs has meant that the librarians adopt or get re-skilled on various aspects, particularly those related to ICTs. Most respondents identified the following as the competencies and skills that have become increasingly important with the introduction of ICTs: competencies and skills associated with technological knowledge, basic computer literacy, internet, metadata; classification and cataloguing, and information retrieval. The interviews with the library directors concurred with the other librarians and hastened to add the following as the other competencies and skills which have become increasingly important after the introduction of ICTs which included good general IT skills and proven ability to learn new applications and understanding of the library management software. It was however noted that the traditional services that demanded specialized skills are still regarded as areas within which librarians require special skills. These include cataloguing and classification, reference services and library instruction.

In regard to the extent to which current competencies and skills have improved service provision in libraries, the majority of respondents (i.e. 44 or 81.5%) pointed out that skills associated with the use of the internet have improved service provision in libraries to a very great extent. The respondents felt that the internet is a source of current and timely information and besides, it is used for information searching, send and receive emails as well as for networking with friends using Facebook, twitter, and MySpace, among others. Other skills that have improved service provision to a great extent include problem solving skills and administration and management skills. The librarians argued that the aforementioned skills have made librarians more visible and users can now see the products and services they are offering. ICT skills have made searching online easier and librarians can now be able to get comprehensive and wide range of information to satisfy user needs. This has, however, come with additional responsibilities but the bottom line remains that users can now access online resources independently after being taken through information literacy classes.

Finally, respondents were asked whether or not the competencies and skills of librarians have changed with the introduction of ICTs in the library and the majority of respondents, numbering 50(92.6%), indicated that the competencies and skills required at this information age have, to a great extent, changed as a result of the introduction of ICTs in their library while a minority who numbered 7 (13.0%) indicated that the competencies and skills have changed slightly. This finding concurred with the observation made by Alidousti and Sheykh-Shoaee (2006) to the effect that information technology has changed performance, skills, and information needs of librarians. New roles and methods of service delivery in libraries have replaced traditional ones.

Having observed that librarians' skills and competencies have changed as a result of ICTs, we sought to find out if there are skills that the respondents felt were needed for effective service provision. Table 7 reveals that all respondents indicated that information retrieval skills were the most needed skills for effective service provision in libraries followed closely by basic computer skills (52 or 96.3%), emailing skills (49 or 90.7%), and information literacy (48 or 88.9%), internet skills (48 or 88.9%), and cataloguing and classification (45 or 83.3%).

Table 7: Skills needed in libraries for effective service provision (N=54)

	Frequency	Percentage (%)
Information retrieval skills	54	100.0
Basic computer skills	52	96.3
Emailing skills	49	90.7
Internet skills	48	88.9
Information literacy skills	48	88.9
Bibliographic (cataloguing & classification skills)	45	83.3
Communication skills	42	77.8
Metadata skills	42	77.8
Library management system skills	42	77.8
Management skills	41	76.0
Problem solving skills	36	66.7
Decision making skills	36	66.7
Marketing skills	34	63.0
Budgeting skills	31	57.4
Listening skills	30	55.6
Evaluative skills	29	53.7
Leadership skills	25	46.3

It is worth noting that Philbin (2014) had opined that information retrieval and dissemination of information are a vital part of the skills needed by library, information and knowledge management professionals. Information retrieval skills are essential to both the librarian and the users to enable them know how to retrieve relevant information for their use. Basic computer skills are a requirement especially at the UON where a library management system is in use. Librarians require computer skills to be able to send emails to users and colleagues and also for Internet searching. Information literacy is essential to libraries because the provision of the right information to the right person at the right time is the key to success for any organization (Brun, 2009). Management skills are also very important although librarians have taken it for granted. Librarians need to manage their staff. On the other hand, budgeting, which was identified as a skill that is needed, is also important because librarians require basic financial skills since there is budgeting involved in library work.

Effects of information and communications technologies (ICTs) on the roles of librarians

The respondents were asked to state whether or not the roles of librarians have generally changed as a result of ICTs in the last 10 years. The findings were not that surprising given the overwhelming support for ICTs at the UoN wherein majority of the respondents responded that they fully supported the introduction and adoption of ICTs in the main library and its constituent libraries. In response to the above question, a total of 51(94.4%) respondents believe that the roles of librarians have generally changed over the last 10years as a result of ICTs while 3(5.6%) respondents said that their roles have not changed. Agreeably, the roles of academic librarians at the UoN have changed tremendously given that they have moved away from manual-based systems. Most functions like acquisition, cataloguing and circulation modules are fully automated. It is however noted that librarians still perform their roles as custodians of information resources. They also organize the resources for easy access and use. Reliance on ICTs to perform many duties and carry our responsibilities at the UoN was noted.

Conclusions and Recommendations

It is no doubt that the functions and services offered in academic libraries, including those offered at the UoN in Kenya, have been transformed courtesy of the information and communication technologies (ICTs). When we compared the available functions, resources and services that were in place at the time of conducting the study (in the information age) and those that were available to the respondents when they first started work, we found that that most functions have been greatly transformed due to adoption and use of ICTs at the UoN. Whereas the format in which some functions/activities are conducted has changed over time given the shift from manual based services to electronic or digital based services, some other functions or activities have been discontinued while others have been introduced. Specifically, functions as well as processes and procedures have been enhanced in the current information age, especially in terms of the mode of delivery, format of resources, time spent on accomplishing tasks, and volume of work. The implication of the aforementioned changes is that new competencies and skills are needed for effective service delivery. This was more apparent through the examination of the extent to which the competencies and skills required of librarians have changed, whereby it was established that information retrieval skills, technological knowledge, basic computer skills and Internet skills were the most valuable skills after the introduction of ICTs in libraries. The need for the aforementioned skills and competencies was indeed noted. As opposed to the traditional skills (e.g. critical analytics of information, communication skills, and managerial skills), the contemporary scenario largely requires computer and Internet-related competencies and skills on the part of librarians. The implication of this finding therefore is that librarians have been forced to learn new skills and obtain new competencies or simply re-skill themselves so as to be enabled to effectively function in the information age.

Finally, the results based on the investigation on the effect of ICTs on the role of librarians generated an agreement by the majority that their roles have changed for the better given that they have moved away from traditional services and most of their functions are now fully automated. Most of them are happy and motivated as a result of the emergence of ICTs. Their roles can be executed with ease in the current information age. An examination of the new roles of librarians at the UoN revealed similar findings as outlined by Jain & Akakandelwa (2016). The library director and her deputies posited that librarians are now required to perform or be involved in duties and responsibilities in the following areas: knowledge management, system librarianship, instruction and teaching, content production and dissemination; curriculum development; training users on the use of the Internet; research support through such techniques as bibliometrics; knowledge brokerage; and blended librarianship. Most of these new roles have a common denominator, namely, they have been propelled by the emergence, adoption and use of ICTs in libraries.

Acknowledgements

This paper has been extracted from a Masters dissertation written by the first author of the paper.

References

Alidousti, S and Sheykh-shoaee, F. 2006. *Information technology in libraries,* IRANDOC: Tehran.

Association of College and Research Libraries (ACRL): *Guidelines for the appointment, promotion and tenure of academic librarians.* 2010. ALA conference, June.2010.

Brine, F. 2004. Information professionals: changing tools, changing roles. *Information Outlook*, 5 (3):84-103.

Brun, C. 2009. Information literacy and Health libraries: *Journal of information literacy* 6(1):1-3.

Business dictionary. 2012. New York: Oxford University Press.

Crawford, W. and Gorman, M. 2005. *Future libraries: dreams, madness & reality*. Chicago: American Library Association.

Deegan, M. and Tanner, S. 2002. *Digital futures: Strategies for information age.* London: Library Association Publishing.

Dessler, G. 2008. *Human Resource Management,* 11th ed., London: Prentice Hall.

Elkin, B. 2005. *The future of library profession*. *IFLA Journal*, 23 (11):78-98.

Evaul, S. 2007. *Competencies for modern librarians*. London: Library Association Publishing.

Godden, P. 1991. *Role of information in the knowledge society*. Los Angeles: SAGE

Heidi, J and Genuis, K. S. 2009.Emotional labour in librarians' instructional work. *Journal of Documentation*, 65 (6): 926-37.

Li, C., Ranaweera, P., Lau, J. 2007. Information literacy and knowledge society. London:

Routledge

Jain, P and Akakandelwa, A. 2016. Challenges of twenty-first century academic libraries in Africa. *African Journal of Library, Archives and Information Science*, 26(2): 145-153.

Janice, S.O. 2006. Changing roles of library professional. *Aslib Proceedings*. 5(1):151-154.

Melchionda, G.M. 2007. Librarians in the age of the internet: Their attitude and their roles. *New library world*, 108 (3/4):123-140.

Mohsenzadeh, F and Moghaddam,A.I. 2008. Application of information technologies in academic libraries. *The Electronic library* 27(6):986-98.

Nyamboga, C.M. and Kemparaju, T.D. 2002. "Information technology in university libraries in Karnataka". *Information Development.* 18(4): 257-65

Obadare, S.O. 2004. The role of information professionals in the digital age: The role of librarians. *D-Lib Magazine*, 48 (1):11-17.

Olivia, C. 2007. The role of librarians: past and future. *D-Lib Magazine,* 15(6):22-25.

Online Dictionary for Library and Information Science. 2005. Englewood, Colorado: Libraries Unlimited.

Orme, V. 2008. You will be…: a study of job advertisements to determine employers' requirements for LIS professionals in the UK in 2007. *Library Review.* 57 (8): 619-33.

Partridge, H. and Hallam, G. 2004. *"The double helix: a personal account of the discovery of the structure of [the information professionals] DNA*" paper presented at ALIA, available at http://conferences.alia.org.au/alia2004/pdfs/partridge.h.paper.pdf (accessed 10 January 2015).

Philbin, M. 2014. Digital skills for tomorrow's world: the independent report of the UK Digital Skills Taskforce: interim report. Beta ed. https://policy.bcs.org/sites/policy.bcs.org/files/Interim%20report.pdf (accessed 25 July 2015).

Ramos, M.M. 2007. *The role of librarians in the 21st century.* Paper presented at 35th ALAP Anniversary Forum UPLB CEAT Auditorium.

Ticker, A.C. 2009. *Fundamentals of library practice: A manual on library routines.* Ibadan: Sterling-Horden Publishers Ltd.

Webster, F. 2009. *A new politics? In Webster (ed), culture and politics in information age.* Routedge, London. 1-13.

OPEN ACCESS INSTITUTIONAL REPOSITORIES IN SELECTED EAST AFRICAN UNIVERSITIES: ACHIEVEMENTS, CHALLENGES AND THE WAY FORWARD

Miriam Kakai
Librarian
Digitisation Section
Makerere University Library

Abstract

Institutional repositories (IRs) have been around since the early 2000's and in East Africa since 2006, specifically at Makerere University in Uganda. Universities in East Africa are still in the intermediate stages of embracing open access and libraries have taken the lead in initiating and implementing IRs. The network of open access repositories was envisioned as the backbone of the open access movement as libraries around the world began implementing and capturing the intellectual assets of their institutions. Researchers in developing countries were thought to benefit more from the open access movement, given that they were more pressed for scholarly literature during the serials crisis and much of their research output was grey literature with few publication avenues. Are repositories in East Africa enabling online dissemination and accessibility of the scholarly information in universities? This paper, therefore, sought to establish the achievements of open access institutional repositories in universities in East Africa, the challenges affecting the provision of open access, and the strategies that could be recommended as the way forward.

Data for this paper was collected through a thorough search of the Internet, journal databases and university websites in Kenya, Tanzania and Uganda to identify literature about open access and institutional repositories in East Africa. The findings reported were also partially based on the author's PhD research and practice as an IR manager.

Keywords: *Open access, Institutional repositories, Universities, East Africa*

Introduction

Open access is the "free availability and unrestricted use" of publications or scholarly literature/information online (Suber, 2015). According to Shearer (2002, p. 90), "the philosophy of open access grew out of the dissatisfaction with the traditional pricing system of scholarly publishing in the west, where universities and research institutions were forced to cancel a significant number of subscriptions." Johnson (2003) noted that IRs were a strategic response to the opportunities of the digital networked environment and the problems in the traditional scholarly journal system. The Budapest Open Access Initiative

(BOAI, 2002) that first defined the open access concept proposed two avenues through which it would be achieved, that is, through publishing in open access journals (the Gold route to open access) and depositing copies of articles published in traditional journals in open access repositories (the Green route to open access). The network of open access repositories was envisioned as the backbone of the open access movement as libraries around the world began implementing and capturing the intellectual assets of their institutions. Harnad (2007) envisioned that about 5% of the research would be archived by the open access journals, while the remaining 95% could be freely accessed via repositories if all researchers immediately began self-archiving their work that they publish in traditional journals.

Crow (2002) defined an institutional repository as a “digital archive of the intellectual product created by the faculty, research staff, and students of an institution and accessible to end-users both within and outside of the institution with few, if any, barriers to access”. IR’s can generally be regarded as a mechanism for ensuring access to knowledge produced at a college or university. Yeates (2003) noted that IRs expand the range of knowledge that can be shared. Crow (2002) pointed out that institutional repositories that constitute the disaggregated model of scholarly publishing included not only pre-prints and research papers, but also extended to research data sets, digital monographs, theses and dissertations, conference papers, listserv archives, and other grey literature. An IR is, therefore, a tangible indicator of a university’s scholarly information that preserves the intellectual output of the institution (Giesecke, 2011) and helps increase its visibility, accessibility, prestige, public value, and can be used as a marketing tool for the institution to potential funders, prospective staff and students. Lagzian, Abrizah and Wee (2015, p. 197) noted that “IR’s have been increasingly recognised as a vital tool for scholarly communication, an important source of institutional visibility and a viable source of institutional knowledge management.” The IR can be used for a number of purposes, some of which have not yet been appropriately exploited in East Africa. The IR is mostly used to manage collections of scholarly information and preserve them for future use/access. However, IR’s also increasingly serve as scholarly communication and collaboration tools for researchers, especially interdisciplinary researchers; journal publishing platforms and as a source of information for bibliometrics and Research Assessment Exercises.

Westell (2006, p. 221) noted that “institutional repositories were not designed to control access but to facilitate open access to their holdings,” and that “the pure institutional repository provides material with no access limitations to support the widest possible dissemination of research findings” (p. 222). Shearer (2003, p. 97) pointed out that “the major goal of the institutional repository, as it grew out of the open access movement was to disseminate scholarly material.”

Shearer (2003, p. 92) also further noted that "in most cases, IRs had no barriers to their content or very low-barrier access (such as registration requirements)." Chan (2004) noted that the primary role of institutional repositories was to facilitate open access to the traditional scholarship in institutions. To sum this up, Casey (2012) re-affirmed the purpose of institutional repositories as partly meant to serve as open access repositories of the intellectual output of the faculty, besides showcasing the tangible results of the institution globally. Are institutional repositories in East Africa achieving the open access goal?

Institutional repositories have been around since the early 2000's and in East Africa since 2006, specifically at Makerere University in Uganda. Universities in East Africa are still in the intermediate stages of embracing open access and libraries have taken the lead in initiating and implementing IRs. They have popularly been known for increasing an institutions visibility on the web because of the scholarly information being displayed from universities. By 30th March 2018, there were 40 IR's in East Africa registered in the Directory of Open Access Repositories (OpenDOAR), 28 from Kenya, 10 from Tanzania and 2 from Uganda. Some of these repositories were however, not from universities, and 4 of them had dead links. There are a number of universities in East Africa that have initiated IR projects, some of which are already accessible on the web but not yet registered in either OpenDOAR or the Registry of Open Access Repositories (ROAR). The extent of IR growth therefore continues to grow and a few studies have already examined their adoption and use. In East Africa, however, not much is known about how far they are enabling open access. Holderied (2009) noted that "institutional repositories present academic institutions with the opportunity to provide global open access to the scholarship that is created within that institution", and the developing world was bound to benefit more from the growth of the open access movement (Shearer, 2002).

A number of studies have shown the achievement of open access in IR's in the developed world, with universities in Australia recording rates of non-full-text documents as low as 5% or less (Xia & Sun, 2007). Not all repositories in the developed world have achieved maximum open access as such, and this depends on a number of factors, the objective of having the repository being one of them. On a world perspective, Prost and Schopfel's (2014) work established that a number of the 25 institutional repositories that they surveyed from the Directory of Open Access Repositories were either with metadata without full-text, metadata with full-text only for authorized users, and items that were under embargo or that were restricted to on-campus access. In other words, these repositories were not as open as expected by the Budapest Open Access Initiatives standards. Prost and Schopfel's study however, did not establish why these repositories were not fully open access, other than pointing out that this would be explicitly clarified in each individual institution's open access policies. Given that IR's were viewed as a complementary option to accessing and disseminating scholarly information, and the developing world was bound to benefit more, this study sought to establish the achievements of open access institutional repositories in universities in East Africa, the challenges affecting the provision of open access, and the strategies recommended as the way forward.

Methodology

University websites in Kenya, Tanzania and Uganda were surveyed for the presence of institutional repositories, the number of items in the repositories (by March 2018) and for the selected universities, how much of these items were open access (by 2014). A thorough search of the Internet and journal databases was also conducted to identify literature about open access and institutional repositories in East Africa. This was complemented by the findings of the author's PhD study on the management and accessibility of open access institutional repositories in selected universities in East Africa, where both qualitative and quantitative methods were used to collect data from 3 universities, with 1 IR from Kenya, Tanzania and Uganda, purposively selected based on the highest number of items in the IR in each country. Six librarians in charge of the IRs were purposively selected and interviewed, whereas 183 researchers, selected using systematic random sampling, responded to a questionnaire. The selected universities, with their level of open access by 2014 were Kenyatta University (KU, 32% OA in IR) in Kenya, Makerere University (Mak, 22% OA in IR) in Uganda and Muhimbili University of Health and Allied Sciences (MUHAS, 98% OA in IR) in Tanzania. To establish the level of open access of the institutional repositories of the universities in this study, an analysis of the first twenty items of each letter of the alphabet was checked for full-text accessibility and the average number of items with full-text content determined.

Achievements

A number of universities in East Africa have acknowledged the role of IRs in centrally collecting, disseminating and preserving the scholarly information of the institution and invested in initiating IR projects, although some of these universities are not very old and still have to accumulate their collections for online visibility and accessibility. IR's in East Africa are growing, but at different rates – fastest in Kenya currently with 27 repositories in universities (see appendix), followed by Tanzania with 7 (University of Dar es Salaam, Sokoine University of Agriculture, Open University of Tanzania, State University of Zanziber, Mzumbe University, Muhimbili University of Health and Allied Sciences, Nelson Mandela African Institute of Science and Technology) and Uganda with 6 repositories in universities (Aga Khan University, Kampala International University, Makerere University, Makerere

University Business School, Uganda Christian University and Uganda Martyrs University) that are currently visible online. Four of the six universities with repositories in Uganda participated in the Electronic Information For Libraries – Swedish Programme for ICT in Developing Regions (EIFL-SPIDER) 2016/2018 project (Open access policies in Kenya, Tanzania and Uganda) and have policies that they are promoting. The plans used to advocate for the policy help in promoting the repository, which is a strategy for growth. At Makerere University, each College Board is being sensitized about the various policy statements in the IR Policy and this is building awareness of how content in the repository is expected to be generated, with responsibilities assigned to different categories of stakeholders. Westell (2006) advised that "a champion in upper administration (at the dean level) and a management structure which includes appropriate advisory committees will contribute to sustained success." This is the next stage to be followed in implementing the IR Policy at Makerere University. Harnad and McGovern (2009) emphasised the importance of mandates incorporated within policies to ensure deposits are made, ensuring the growth and open access of the IR. With reference to the author's PhD study findings, 68% of the respondents were in favour of having university mandates requiring researchers to deposit research output in the institutional repositories. This corroborated with many other studies (Abrizah, 2009; Dutta & Paul, 2014; Goutam & Dibyendu, 2014; Kennan, 2007; Kim, 2007; Sale, 2006; Singeh, Abrizah & Karim, 2013; Swan & Brown, 2004; 2005; Yang & Li, 2015), and the Consortium of Uganda University Libraries (CUUL) universities that participated in the EIFL-SPIDER 2016/2018 project have integrated mandatory statements in their IR policies. Although mandates are good and highly recommended, Quinn (2010) pointed out that mandates alone would not overcome the researcher's psychological resistance to participation in self-archiving, and suggested that this should be done together with other strategies of encouraging faculty to deposit articles in repositories.

With the growing number of institutional repositories in East Africa, much of the grey literature, such as research reports, theses and dissertations, seminar and conference papers that were unpublished and previously only physically accessible from the library shelves (Chisenga, 2006), is now visible on the web, and increasingly being made accessible to the general public for local and international utilisation. Although the level of open access was noted to be low by 2014 at Kenyatta University (32%) and Makerere University (22%), universities in East Africa are prioritising open access policies to ensure that what is made visible online is actually accessible in full-text. Kenyatta University, which started its IR with abstracts from the Database of African Theses and Dissertations (DATAD) project had streamlined the policy issues regarding student theses and dissertations and were uploading soft copies of graduating students while digitising the print theses retrospectively and making them accessible in the IR. Makerere University, which started digitising and uploading theses and dissertations in the IR prior to clearing consent issues, had these items restricted in the IR, and is now advocating for mandatory self-archiving of theses and dissertations in the IR policy. As a strategy to populate the IRs, the libraries at Kenyatta University, Makerere University and Muhimbili University of Health and Allied Sciences had embarked on in-house retrospective digitisation of theses and dissertations, with funding either directly from the library or sourced from funding agencies such as SIDA at Makerere University. The IR at Makerere University started on the foundation of the digitisation unit in the library and the print theses and dissertation collection. For the other libraries, digitising the theses and dissertations was a strategy of adding full-text to the already established repository of metadata content and this has helped improve open access.

Lack of human resource (expertise) to develop, implement and manage IRs in East Africa was one of the factors that were affecting the adoption of open access as stipulated by UNESCO on the Global Open Access Portal. However, the intervention of organisations such as INASP and EIFL, in addition to international partner universities and funding agencies, working in collaboration with library consortia in Kenya, Tanzania and Uganda (Kenya Library & Information Services Consortium – KLISC, Consortium of Tanzania Universities and Research Libraries – COTUL, Consortium of Uganda University Libraries – CUUL) have helped build capacity for the librarians to plan, implement and manage repositories, as well as develop open access policies. Institutions that initiated repositories in the early 2000's did not start with policies and this affected the implementation of open access. With the training and guidance provided so far, the situation is improving, with universities that have open access policies hoping to yield more content in the repositories.

Institutional repository projects in East Africa have been initiated by individual universities, with libraries in collaboration with the institutional IT departments, either engaging the university administration or finding other means of funding the project. Westell (2006) noted that this was a more sustainable funding model for archiving scholarly materials and providing access through an institution-supported platform, which would have been assessed for the projected institutional content storage and backup requirements, and centrally funded as IT utilities that benefit all members of the university community. Although getting funding for IR projects makes the adoption process faster, internal funding helps the institution to strategically plan how the project will be sustained. A number of universities in Kenya, both big and small have managed to setup and sustain repositories and others can emulate from them.

Researchers who have been sensitized about the benefits of self-archiving and the anticipated long-term preservation of literature are positive about open access in IRs. The majority of the respondents in the author's PhD study (97% at Makerere University, 91% at Kenyatta University and 100% at MUHAS) agreed to provide open access to content in institutional repositories or promised to share their scholarly information, however, they need to be followed up for action. Adoption of open access among researchers has been high in some disciplines (health as evidenced from the level of open access at MUHAS) than others, probably because of the culture of publishing and the open access mandates enforced by funding agencies that are more accessible in the health sciences. Strategies of breaking the resistance to self-archiving in other disciplines need to be explored in order to expand the horizon of open access.

Challenges

As observed from the 2013/2014 EIFL-SPIDER project while setting ground for the 2016/2018 project, "the momentum to embrace open access (OA) initiatives in Kenya, Tanzania and Uganda had been building up, but the growth of digital content, accessible via the internet, was still slow" (EIFL, n.d.). Some of the expressed reasons as to why this was so include the fact that, it was sometimes difficult to get researchers to agree to share their work, especially when there were no open access policies operating within the institution. Although the EIFL-SPIDER project had succeeded in having institutions draft IR policies, some of them had stagnated because it was essential to involve all stakeholders but bureaucratic to achieve. The inability to implement the drafted policies was slowing content collection and affecting open access in the IR. The absence of government and/or funder mandates in East Africa has also affected the collection and provision of open access in IR's. Otanda, Muneja and Kuchma (2015) in their presentation reporting about the EIFL-SPIDER 2013/2014 project (Open access in Kenya, Tanzania and Uganda) noted that there was no open access enabling environment with the absence of open access country policies in Kenya, Tanzania and Uganda to guide institutions on how to proceed. Haas (as cited in Westell, 2006, p. 214) noted that "if all major funding agencies mandated deposition, it was likely that major repositories could be developed rapidly." Some of the policies lacked mandatory provisions to deposit content in the repository rendering the archiving process to remain voluntary. Tracking of publications from individual researchers in the institution, and from the various publishers scattered the world over was also noted as a slow and tedious task.

Lack of awareness of open access institutional repositories among researchers and academicians, and the limited staff involved in the repository activities were also part of the reasons why there was low content in the IR and therefore less open access. The majority of the respondents in the author's PhD study (91% at Makerere University, 98% at Kenyatta University and 86% at MUHAS) expressed need for awareness building about open access and institutional repositories. Librarians have not adopted the practice of developing informational websites to guide users on how open access is being implemented in the university and how they can participate. Dependence on one-on-one, seminars and workshops, e-mails and print marketing materials are not sufficient when trying to reach the wider university community. Websites on open access and how it applied to individual institutions could be a good and permanent source of information and easy pointer for those who might not be able to attend face-to-face workshops. Dulle (2010) recommended linking open access information sources to library websites for users to access. This could be an easy way of getting researchers to find information on open access from one location, which off course could still be distributed through promotional materials like leaflets and brochures. Abrizah (2009) recommended providing FAQs (Frequently Asked Questions) covering topics such as ownership of copyright, the use of creative commons licenses while providing open access, self-archiving and the exposure of plagiarism, preservation of materials and file security, how to determine what to self-archive using the SHERPA/RoMEO list of journal publishers' self-archiving policies.

Shearer (2003) argued that the number of staff engaged in advocating and promoting the repository affected the visibility and growth of the repository. It was established that the staff working on the IR activities in universities in East Africa were limited to a few librarians who had been assigned the responsibilities of the IR, with minimal or no support from the reference or other librarians especially in marketing and soliciting for IR content. Giesecke (2011) pointed out that repository staffing should be composed of those with direct responsibility for the daily operation of the services and those who have new responsibilities added to their positions to support the service, such as marketing roles, contributing metadata and providing training. Librarians positioned in branch/faculty/college libraries often interface with researchers and are in a better position to promote the IR and open access within their locations. In fact, all categories of the IR stakeholders, such as the administrators, librarians, researchers and students should be involved in OA and IR advocacy for any success to be recorded in the institution. Otanda, Muneja and Kuchma (2015) thought it was important to incorporate students in the IR/OA advocacy strategies to reach out to research administrators, academic staff and their fellow students, however, after training them for specific events such as open access week; they do not seem to continue promoting the cause. Targeted training of trainer workshops for students in different fields could be used (as has been tried in the health discipline in Kenya – the Medical Students Association of Kenya). Efforts to sensitize the university community about the benefits of the IR and how to populate it have been made by the repository managers but the patronage from the research community has been appalling. These could be some of the reasons why some of the currently online repositories were not registered in OpenDOAR because there was not much to show the world as yet.

Westell (2006, p. 215) noted that "one of the most difficult and time consuming tasks in populating a repository is ensuring that the appropriate copyright clearances have been sought." One of the reasons why there is more metadata only content in repositories in East Africa is because the process of contacting publishers for permission to self-archive was minimally, if not done at all. Once repository managers establish that a particular publisher does not favour self-archiving of the publisher's PDF which is in most cases the only available option, they neither contact the author(s) for other versions nor contact the publisher. The end result is adding the metadata and uploading the abstract, which is already part of the metadata. An essential component of repositories is that they are dependent on permissions from others. Before content is deposited in an IR, permission should be sought from the copyright owner, and in a university setting, this may include university administration, staff, students and publishers. For journal publications, these are some of the expected procedures to follow: First check for the publisher self-archiving requirements from either the SHERPA/RoMEO database or the publisher's website. If conditions do not favour immediate self-archiving of the publisher's PDF, then contact the publisher for permission/clarification. If other versions of the article can be self-archived, contact the author(s) for those versions. Always add publisher statements and website links to the metadata. For publishers/journals where most of the researchers in a university tend to publish, request for blanket institutional permission to self-archive in the repository.

Most universities in East Africa have adopted using the DSpace software, which is freely downloadable but not easy to install and maintain. The libraries mostly depend on the university IT department, which are often already over-burdened with other IT systems and therefore offer divided attention, slowing the whole process. Some new universities in Uganda interested in setting up IRs fail to get IT personnel to install the software and have to seek for assistance from either older universities that have repositories or the Consortium of Uganda University Libraries (CUUL), which is still planning to form a pool of skilled DSpace IT personnel to promote IRs within the country. The inability to build IT capacity within the library to initiate and sustain IR projects is limiting the open access adoption process in East Africa.

Conclusion

In the electronic information environment, library users are interested in easily accessing full-text information resources, and these should be readily available from institutional repositories. Emphasis should therefore be placed on processes that promote open access deposits in repositories. Institutionally mandated deposits are essentially required if universities in East Africa would like to move beyond the slow and time consuming self-driven/voluntary process of collecting content and increase the visibility and accessibility of scholarly information locally produced to enhance development within the region. Staff participation in IR activities and collaboration in self-archiving or providing their scholarly information for mediated archiving are essential for open access. For student theses and dissertations, requiring deposit in the IR as a condition before one graduates, would maximise content collection and growth.

The way forward / recommendations

There is need to involve more stakeholders in the advocacy for self-archiving and open access in the IR. Engaging the students and researchers in sensitizing their fellow colleagues and involving more librarians in the marketing of the repository could go a long way in reaching a wider community of the university. This worked quite well at the University of Kansas Libraries (Emmett, Stratton, Peterson, Church-Duran & Haricombe, 2011), the Grand Valley State University in Michigan (Beaubien, Masselink, & Tyron, 2009) and at the University of Oregon Libraries (Jenkins, Breakstone & Hixson, 2005).

There should be a top-down development of open access policies, beginning with government and funding agencies to smoothen the process that institutions take to develop IR policies because then, the IR stakeholders would have prior knowledge about OA policies and would easily pass and implement IR policies.

Advocacy for institutional repository adoption in universities in East Africa should be re-enforced by engaging administrators and researchers and combined with assisted efforts to install the software for institutions that do not have the IT capacity. DSpace is the commonly used software, and IT capacity to install, maintain, trouble shoot and upgrade can be built within the library consortia, with guidance from the DSpace technical support group.

References

Abrizah, A. (2009). The cautious faculty: Their awareness and attitudes towards institutional repositories. *Malaysian Journal of Library & Information Science, 14*(2), 17-37.

Beaubien, S., Masselink, L. & Tyron, J. (2009). *Recasting the role of comprehensive university libraries: Starting points for educating librarians on the issues of scholarly communication and institutional repositories*. Paper presented at the ACRL Fourteenth National Conference.

BOAI (2002). Budapest Open Access Initiative. Retrieved on 8th July 2014 from http://www.budapestopenaccessinitiative.org

Casey, A. M. (2012). Does tenure matter? Factors influencing faculty contributions to institutional repositories. *Journal of Librarianship and Scholarly Communication, 1*(1), eP1032

Chan, L. (2004). Supporting and enhancing scholarship in the digital age: The role of open access institutional repositories. *Canadian Journal of Communication*, 29(3 & 4), 277-300.

Crow, R. (2002). *The case for institutional repositories: A SPARC position paper*. Retrieved on 8th July 2014 from http://works.bepress.com/cgi/viewcontent.cgi?article=1006&context=ir_research

Dulle, F. W. (2010). *An analysis of open access scholarly communication in Tanzanian public universities.* Unpublished PhD dissertation, University of South Africa.

Dutta, G. & Paul, D. (2014). Awareness on institutional repositories - related issues by faculty of University of Calcutta. *DESIDOC Journal of Library and Information Technology, 34*(4), 293-297. doi: 10.14429/djlit.34.5138

EIFL (n.d.). Open access policy development in Kenya, Tanzania and Uganda to make more digital content available. Retrieved from https://rsr.akvo.org/en/project/6642/#report

Emmett, A., Stratton, J., Peterson, T., Church-Duran, J. & Haricombe, L. J. (2011). Toward open access: It takes a "village". *Journal of Library Administration,* 51(5-6), 557-579.

Giesecke, J. (2011). Institutional repositories: Keys to success. *Journal of Library Administration, 51*(5-6), 529-542.

Goutam, D. & Dibyendu, P. (2014). Awareness on institutional repositories - related issues by faculty of University of Calcutta. *DESIDOC Journal of Library & Information Technology, 34*(4), 293-297. doi: 10.14429/djlit.34.5138

Harnad, S. (2007). *Mandates and metrics: How open repositories enable universities to manage, measure and maximise their research assets*. Paper presented at the UUK Resarch Information and Management Workshop, United Kingdom. Presentation retrieved from https://eprints.soton.ac.uk/265693/

Harnad, S., & McGovern, N. (2009). Topic 4: Institutional repository success is dependent upon mandates. *Bulletin of the American Society for Information Science and Technology, 34*(4), 27-31.

Holderied, A. (2009). Institutional repositories provide open access to scholarly communication. *Associates: The Electronic Library Support Staff Journal, 15*(3). Retrieved on 29th November 2015 from http://associates.ucr.edu/journal/?page_id=314

Jenkins, B., Breakstone, E. & Hixson, C. (2005). Content in, content out: The dual roles of the reference librarian in institutional repositories. *Reference Services Review,* 33(3), 312-324.

Johnson, R. K. (2002). Institutional repositories: Partnering with faculty to enhance scholarly communication. *D-Lib Magazine, 8*(11).

Kennan, M. A. (2007). Academic authors, scholarly publishing, and open access in Australia. *Learned Publishing, 20*(2), 138-146. doi: 10.1087/174148507X185117

Kim, J. (2007). Motivating and impeding factors affecting faculty contribution to institutional repositories. *Journal of Digital Information*, 8(2).

Lagzian, F., Abrizah, A., & Wee, M. C. (2015). Critical success factors for institutional repositories implementation. *The Electronic Library, 33*(2), 196-209.

Otanda, R., Muneja, P. & Kuchma, I. (2015). *Results open access (OA): Knowledge sharing and sustainable scholarly communication in Kenya, Tanzania and Uganda.* Presentation at the NASAC Open Access Consultative Meeting, January 29-30, Nairobi, Kenya.

Prost, H. & Schopfel, J. (2014). Degrees of openness: Access restrictions in institutional repositories. *D-Lib Magazine*, 20.

Quinn, B. (2010). Reducing psychological resistance to digital repositories. *Information Technology and Libraries*, 29(2), 67-75.

Sale, A. (2006). The acquisition of open access research articles. *First Monday,* 11(9), Retrieved on 10th April 2017 from: http://eprints.utas.edu.au/388/1/FirstMondayOct06.pdf

Shearer, K. M. (2003). Institutional repositories: Towards the identification of critical success factors. *The Canadian Journal of Information and Library Science*, 27(3), 89-108.

Singeh, F. W., Abrizah, A. & Karim, N. H. A. (2013). What inhibits authors to self-archive in open access repositories? A Malaysian case. *Information Development, 29*(1), 24-35. doi: 10.1177/0266666912450450

Suber, P. (2015). Open access overview: Focusing on open access to peer-reviewed research articles and their preprints. Accessed on 31st December 2015 from https://legacy.earlham.edu/~peters/fos/overview.htm

Swan, A. & Brown, S. (2004). Authors and open access publishing. *Learned Publishing, 17*, 219-224.

Swan, A. & Brown, S. (2005). *Open access self-archiving: An author study*. UK: Key Perspectives Limited.

Westell, M. (2006). Institutional repositories: Proposed indicators of success. *Library Hi Tech.* 24(2), 211-226. doi: 10.1108/07378830610669583

Xia, J. & Sun, L. (2007). Assessment of self-archiving in institutional repositories: Depositorship and full-text availability. *Serials Review, 33*(1), 14-21.

Yang, Z. Y. & Li, Y. (2015). University faculty awareness and attitudes towards open access publishing and the institutional repository: A case study. *Journal of Librarianship and Scholarly Communication, 3*(1). doi: 10.7710/2162-3309.1210

Yeates, R. (2003). Institutional repositories. VINE, 33(2), 96-100. doi: 10.1108/03055720310509064

Appendix

Status of Online Institutional Repositories in Universities in Kenya, Tanzania and Uganda by 30th March 2018

Public and Private Chartered Universities in Kenya

No.	University name	Year established	IR Online	No. of Items in IR
PUBLIC CHARTERED UNIVERSITIES IN KENYA				
1	University of Nairobi	1970	Yes	84,705 items
2	Moi University	1984	Yes	847 items
3	Kenyatta University	1985	Yes	13,953 items
4	Egerton University	1987	Yes	817 items
5	Jomo Kenyatta University of Agriculture and Technology	1994	No	Dead Link
6	Maseno University	1991	Yes	323 items

No.	University name	Year established	IR Online	No. of Items in IR
7	Chuka University	2007	No	
8	Dedan Kimathi University of Technology	2007	No	Dead Link
9	Kisii University	2007	No	Dead Link
10	Masinde Muliro University of Science and Technology	2007	Yes	136 items
11	Pwani University	2007	Yes	367 items
12	Technical University of Kenya	2007	Yes	873 items
13	Technical University of Mombasa	2007	Yes	10,223 items
14	Maasai Mara University	2008	Yes	5,057 items
15	Meru University of Science and Technology	2008	No	
16	Multimedia University of Kenya	2008	No	
17	South Eastern Kenya University	2008	Yes	3,539 items
18	Jaramogi Odinga University of Science and Technology	2009	No	
19	Laikipia University	2009	No	
20	University of Kabianga	2009	No	
21	Karatina University	2010	Yes	325 items
22	University of Eldorat	2010	No	Dead Link
23	Kibabii University	2011	No	
24	Kirinyaga University	2011	Yes	91 items
25	Machakos University	2011	Yes	81 items
26	Murang'a University of Technology	2011	Yes	2,846 items
27	Rongo University	2011	No	Dead Link
28	Taita Taveta University	2011	Yes	130 items
29	The Co-operative University of Kenya	2011	No	Dead Link
30	University of Embu	2011	Yes	1,829 items
31	Garissa University	2011	No	Dead Link
PRIVATE CHARTERED UNIVERSITIES IN KENYA				
32	University of Eastern Africa, Baraton	1989	No	
33	Catholic University of Eastern Africa (CUEA)	1989	No	

No.	University name	Year established	IR Online	No. of Items in IR
34	Daystar University	1989	Yes	1,148 items
35	Scott Christian University	1989	No	
36	United States International University (USIU) - Kenya	1989	Yes	3463 items
37	Africa Nazarene University	1993	No	
38	Kenya Methodist University	1997	Yes	Can't tell
39	St Paul's University	1989	Yes	569 items
40	Pan Africa Christian University	1989	No	
41	Kabarak University	2002	Yes	1,268 items
42	Strathmore University	2002	Yes	2,163 items
43	Africa International University	1989	Yes	312 items
44	Kenya Highlands Evangelical University	1989	No	
45	Mount Kenya University	2008	Yes	5252 items
46	Great Lakes University of Kisumu	2005	No	
47	Adventist University	2005	No	
48	KCA University	2007	Yes	267 items
49	KAG – EAST University	1989	No	
INSTITUTIONS WITH LETTERS OF INTERIM AUTHORITY				
50	Management University of Africa	2011	Yes	Can't tell

Source: *Commission for University Education and University Websites*

Public and Private Universities in Tanzania

No.	University name	Year established	IR Online	No. of Items in IR
PUBLIC UNIVERSITIES IN TANZANIA				
1	University of Dar es Salaam		Yes	4,512 items
2	Sokoine University of Agriculture		Yes	1,788 items
3	Open University of Tanzania		Yes	Can't tell
4	Ardhi University		No	
5	State University of Zanziber		Yes	67 items
6	Mzumbe University		Yes	1,686 items

No.	University name	Year established	IR Online	No. of Items in IR
7	Muhimbili University of Health and Allied Sciences		Yes	1,781 items
8	Nelson Mandela African Institute of Science and Technology		Yes	8 items
9	University of Dodoma		No	
10	Mbeya University of Science and Technology		No	
11	Moshi Cooperative University		No	
12	Mwalimu Julius K. Nyerere University of Agriculture and Technology		No	
PRIVATE UNIVERSITIES IN TANZANIA				
13	Hubert Kairuki Memorial University		No	
14	International Medical and Technological University		No	
15	Tumaini University Makumira		No	
16	St. Augustine University of Tanzania		No	Dead Link
17	Zanzibar University		No	
18	Mount Meru University		No	
19	University of Arusha		No	
20	Teofilo Kisanji University		No	
21	Muslim University of Morogoro		No	
22	St. John’s University of Tanzania		No	
23	University of Bagamoyo		No	
24	Catholic University of Health and Allied Sciences		No	
25	St. Joseph University in Tanzania		No	
26	United African University of Tanzania		No	
27	Sebastian Kolowa Memorial University		No	
28	University of Iringa		No	
29	AbdulRahman Al-Sumait Memorial University		No	
30	Mwenge Catholic University		No	
31	Ruaha Catholic University		No	

No.	University name	Year established	IR Online	No. of Items in IR
32	Eckernforde Tanga University		No	
33	Aga Khan University		No	

Source: *Tanzania Commission for Universities and University Websites*

Public and Private Universities in Uganda

No.	University name	Year established	IR Online	No. of Items in IR
PUBLIC UNIVERSITIES IN UGANDA				
1	Busitema University	2007	No	
2	Gulu University	2002	No	
3	Kabale University	2005	No	
4	Kyambogo University	2002	No	
5	Lira University	2012	No	
6	Makerere University	1922	Yes	5,299 items
7	Makerere University Business School	1997	Yes	No items
8	Mbarara University of Science and Technology	1989	No	
9	Mountains of the Moon University	2005	No	
10	Muni University	2013	No	
11	Soroti University	2015	No	
12	Uganda Management Institute	1968	No	
PRIVATE UNIVERSITIES IN UGANDA				
13	Africa Renewal University	2013	No	
14	African Bible University	2005	No	
15	African Rural University	2011	No	
16	Aga Khan University	2001	Yes	Can't tell
17	All Saints University, Lango	2008	No	
18	Ankole Western University	2016	No	
19	Avance International University	2017	No	
20	Bishop Stuart University	2006	No	
21	Bugema University	1994	No	
22	Busoga University	1999	No	

No.	University name	Year established	IR Online	No. of Items in IR
23	Cavendish University Uganda	2008	No	
24	Ibanda University	2014	No	
25	International Business, Science & Technology University	2011	No	
26	International Health Sciences University	2008	No	
27	International University of East Africa	2010	No	
28	Islamic University in Uganda	1988	No	
29	Kampala International University	2001	Yes	318 items
30	Kampala University	2000	No	
31	Kiyiwa International University	2015	No	
32	Kumi University	2004	No	
33	Lira University	2015	No	
34	LivingStone International University	2011	No	
35	Metropolitan International University	2017	No	
36	Muteesa I Royal University	2007	No	
37	Ndejje University	1992	No	
38	Nile University	2018	No	
39	Nkumba University	1999	No	
40	Nsaka University	2013	No	
41	St. Augustine International University	2011	No	
42	St. Lawrence University	2007	No	
43	Stafford University Uganda	2015	No	
44	Team University	2015	No	
45	Uganda Christian University	1997	Yes	110 items
46	Uganda Martyrs University	1993	Yes	149 items
47	Uganda Pentecostal University	2005	No	
48	University of the Sacred Heart Gulu	2016	No	
49	Uganda Technology and Management University	2013	No	
50	Valley University of Science & Technology	2015	No	
51	Victoria University Uganda	2010	No	

No.	University name	Year established	IR Online	No. of Items in IR
52	Virtual University of Uganda	2011	No	

Source: *Uganda National Council for Higher Education and University Websites*

Institutional Repositories Registered in the Directory of Open Access Repositories from Kenya, Tanzania and Uganda

By 30th March 2018, the Directory of Open Access Repositories had 28 repositories from Kenya, 10 from Tanzania and 2 from Uganda.

Kenya

1) **Dedan Kimathi University of Technology** - http://www.dkut.ac.ke/ [Dead Link]
    a. ***Dedan Kimathi University of Technology Digital Repository***
    http://repository.dkut.ac.ke:8080/xmlui/?Itemid=250/
2) **Egerton University** - http://www.egerton.ac.ke/
    a. ***Egerton University Institutional Repository (EUIR)***
    http://ir-library.egerton.ac.ke/
3) **International Livestock Research Institute (ILRI)** - http://www.ilri.org/
    a. ***Mahider***
    http://mahider.ilri.org/handle/10568/1
4) **Jomo Kenyatta University of Agriculture and Technology (JKUAT)** - http://www.jkuat.ac.ke/ [Dead Link]
    a. ***JKUAT Digital Repository***
    http://ir.jkuat.ac.ke/
5) **Karatina University** - http://www.karu.ac.ke/
    a. ***KarUSpace***
    http://41.89.230.28:8080/xmlui/
6) **KCA University** - http://www.kca.ac.ke/
    a. ***KCA Academic Commons***
    http://41.89.49.13:8080/xmlui/
7) **Kenya Agricultural Research Institute (KARI)** - http://www.kari.org/
    a. ***KARI e-repository***
    http://www.kari.org/index.php?q=content/kari-e-repository
8) **Kenya Human Rights Commission** - http://www.khrc.or.ke/
    a. ***Kenya Human Rights Commission Institutional Repository***
    http://resource.khrc.or.ke:8181/khrc/
9) **Kenya Institute of Management** - https://www.kim.ac.ke/
    a. ***KIM Repository***
    http://41.89.43.7/
10) **Kenyatta University** - http://www.ku.ac.ke/
    a. ***Kenyatta University Institutional Repository***
    http://ir-library.ku.ac.ke/

11) **Kisii University** - http://www.kisiiuniversity.ac.ke/ [Dead Link]
    a. ***Kisii University Digital Repository***
    http://41.89.196.16:8080/xmlui/
12) **Lake Victoria Basin Commission** - http://www.lvbcom.org/
    a. ***Lake Victoria Basin Commission (LVBC) Repository***
    http://195.202.82.11:8080/jspui/handle/123456789/12
13) **Maasai Mara University** - http://www.mmarau.ac.ke/
    a. ***Maasai Mara University Institutional Repository***
    http://41.89.101.166:8080/xmlui/
14) **Masinde Muliro University of Science and Technology** - http://www.mmust.ac.ke/
    a. ***Masinde Muliro University of Science and Technology Digital Repository***
    http://ir-library.mmust.ac.ke/
15) **Moi University** - http://www.mu.ac.ke/
    a. ***Moi University Institutional Repository***
    http://ir.mu.ac.ke/
16) **Muranga University of Technology** - http://mut.ac.ke/
    a. ***MUT INSTITUTIONAL REPOSITORY***
    http://repository.mut.ac.ke:8080/xmlui/
17) **Pwani University** - http://www.pu.ac.ke/
    a. ***Pwani University Institutional Repository***
    http://elibrary.pu.ac.ke/ir/
18) **Rift Valley Institute** - http://www.riftvalley.net/
    a. ***Sudan Open Archive** (SOA)*
    http://www.sudanarchive.net/
19) **South Eastern Kenya University** - http://www.seku.ac.ke/
    a. ***South Eastern Kenya University Digital Repository***
    http://repository.seku.ac.ke/
20) **St. Pauls University** - http://www.spu.ac.ke/
    a. ***St. Paul's University Institutional Repository***
    http://41.89.51.173:8080/xmlui/
21) **Strathmore University** - http://www.strathmore.edu/
    a. ***SU+ Digital Repository***
    https://su-plus.strathmore.edu/
    b. ***SU-Portal***
    https://su-plus.strathmore.edu/
22) **Technical University of Kenya** - http://tukenya.ac.ke/
    a. ***Tukenya Institutional Repository***
    http://repository.tukenya.ac.ke/
23) **Technical University of Mombasa** - http://www.tum.ac.ke/
    a. ***Technical University of Mombasa Institutional Repository** (IR@Tum)*
    http://ir.tum.ac.ke/
24) **The Management Univesity of Africa** - http://www.mua.ac.ke/
    a. ***The Management Univesity of Africa Repository***
    http://repository.mua.ac.ke/
25) **United States International University - Africa** - http://www.usiu.ac.ke/

a. ***USIU Africa Digital Repository** (USIU)*
http://erepo.usiu.ac.ke/

26) **University of Eldoret** - http://www.uoeld.ac.ke/karibu/ [Dead Link]
    a. ***University of Eldoret Institutional Repository***
    http://41.89.164.122:8080/xmlui/
27) **University of Embu** - http://www.embuni.ac.ke/
    a. ***Embu University Repository***
    http://repository.embuni.ac.ke/
28) **University of Nairobi** - http://www.uonbi.ac.ke//
    a. ***University of Nairobi Digital Repository***
    http://erepository.uonbi.ac.ke/

Tanzania

1) **Ifakara Health Institute** - http://www.ihi.or.tz/
    1. ***Digital Library of the Tanzania Health Community** (e-Health)*
    http://ihi.eprints.org/
2) **Muhimbili University of Health and Allied Health Sciences (MUHAS)** - http://www.muhas.ac.tz/
    1. ***MUHAS Institutional Repository***
    http://ir.muhas.ac.tz:8080/jspui/
3) **Mzumbe University** - http://web.mzumbe.ac.tz/
    1. ***Mzumbe University Scholar Repository***
    http://scholar.mzumbe.ac.tz/
4) **Nelson Mandela -African Insitution of Science and Technology** - http://www.nm-aist.ac.tz/
    1. ***NM-AIST Repository***
    http://dspace.nm-aist.ac.tz/
5) **Open University of Tanzania** - http://www.out.ac.tz/
    1. ***Digital Library of Open University of Tanzania***
    http://repository.out.ac.tz/
6) **Saint Augustine University of Tanzania (SAUT)** - http://www.saut.ac.tz/
    1. ***Mario Mgulunde Learning Resource Centre Repository** (MLRC Instititutional Repository)*
    http://41.59.3.91:8080/xmlui
7) **Sokoine University of Agriculture** - http://www.suanet.ac.tz/
    1. ***Sokoine University of Agriculture Institutional Repository***
    http://www.suaire.suanet.ac.tz/
    2. ***TaCCIRE** (Tanzania Climate Change Information Repository)*
    http://www.taccire.suanet.ac.tz/xmlui
8) **TANZANIA COMMISSION FOR AIDS (TACAIDS)** - http://www.tacaids.go.tz/
    1. ***TACAIDS Digital Repository***
    http://tacaidslibrary.go.tz/
9) **THE STATE UNIVERSITY OF ZANZIBAR (SUZA)** - http://www.suza.ac.tz/
    1. ***SUZA REPOSITORY***
    http://repository.suza.ac.tz:8080/xmlui/

10) **University of Dar es Salaam** - https://udsm.ac.tz/
    1. ***University of Dar es Salaam***
       http://repository.udsm.ac.tz:8080/xmlui/

Uganda

1) **Makerere University** - http://www.mak.ac.ug/
    1. ***Makerere University Institutional Repository (Mak IR)***
       http://makir.mak.ac.ug/
2) **Regional Universities Forum for Capacity Building in Agriculture** - http://www.ruforum.org/
    1. ***RUFORUM Institutional Repository***
       http://repository.ruforum.org/

THE INFLUENCE OF THE OPEN ACCESS MOVEMENT ON FACULTY RESEARCH OUTPUT AND UNIVERSITY LIBRARIES IN AFRICA

Patience Agabirwe
Assistant Lecturer,
East African School of Library & Information Science
College of Computing and Information Science
Makerere University

Abstract

Based on literature review, the purpose of this paper is to explore the state of the OA movement in African universities, its influence on university libraries and research output by faculty. As an innovative form of scholarly communication within the digital environment, the Open Access (OA) movement presents equal opportunities to every member of society and guarantees equal and universal access to information and knowledge. It seeks to reduce the access and knowledge divide thus allow researchers from developed and developing countries to contribute to enriching human knowledge as well as bridging the global North-South research divide. This movement was led by the quantitative increase in scientific information across the world , with a number of implications, which include; rapid growth of research articles, excessive increase in journal prices/subscription imposed by commercial publishers and tight library budgets for purchase of these journals that hardly ever rose.

Owing to this, most African countries before OA resources struggled to obtain access to journals due to un affordable journal prices just as in developed countries, but to a greater extent and consequently with greater negative repercussions. With OA movement, African scholars are able to share their thoughts and exchange information with one another for example in universities, OA provides an alternative model of scholarly publishing to free online access, promotes freedom of inquiry and full and open availability of scholarly literature on a global scale. Currently, university libraries of Africa have played an active role in the expansion of the OA movement by promoting it in a variety of ways, such as: including records for OA journals in their public catalogues and e-journal lists, collaborating with their institutions to establish institutional repositories, participating in, and at times, leading institutional initiatives to encourage faculty to deposit their work in the institution's repository. On the other hand, university faculties have been teaching, researching, producing scholarly works and responsible to publish in OA journals and self-archive their work in their institutional repositories (IR). Although OA has been significant to universities in Africa, there are discussions *about the quality of OA publications from Africa that has brought the rise of predatory journal publishers; a challenge that is affecting most university scholars in the region. To this, the researcher recommends that those enforcing compliance and quality should quest those publishers to make sure that all journal publishers surrender their publications to indexers and use bibliometric methods to judge their quality, influence and impact.*

Keywords: *Open Access; OA; Open Access movement, Africa, Universities; University libraries; Librarians*

Introduction

Traditional subscription based on scientific journals has access limitations; articles are inaccessible to the majority since access is based on the users' ability to pay. This makes access to such research literature discriminatory (Sarah, 2013). Open access (OA) movement is a humanitarian movement (Shuva & Taisir, 2016) that is focused on giving scientific information to those who do not have it thus addresses perceived inequities of access to scientific information (Nwagwu, 2013). It presents equal opportunities, guarantees equal and universal access to information and knowledge for every member of society via the internet without any or minimum financial cost, economic, legal or technical other than those intrinsic to the Internet (Chan et al., 2005; Drott, 2006; Uddin, 2014; Poynder, 2015; Shuva & Taisir, 2016; Ayeni , 2017). Users are free to read, download, copy, distribute, print, search or link to the full text of OA works (Drott, 2006). OA seeks to reduce the access and knowledge divide and allow researchers from developed and developing regions to contribute to enriching human knowledge (Ahmed, 2007; Eloff et al., 2013; Fernandez, 2006; Ghosh & Das, 2007; Herb, 2010; Veletsianos & Kimmons, 2012) as well as bridge the global North-South research divide (Adcock & Fottrell, 2008). Additionally, it promotes freedom of inquiry, full and open availability of scientific information on a global scale in university circles (Nwagwu, 2016). Removing access barriers to literature is considered a humanitarian right to access knowledge which is vital for developing countries (Rens and Kahn, 2009) as it enriches education, accelerates research, shares the learning of the rich with the poor and vice versa. Increased access to this literature is an essential pillar for sustainable development (Bradley, 2016) as it lays the foundation for uniting humanity in a common intellectual conversation and quest for knowledge (Budapest Open Access Initiative (BOAI), Open Society Institute, 2001).

The primary and traditional role of universities is the generation and transmission of knowledge and the training of minds. But more importantly is to engage in research that could lead to the contribution of knowledge. Before the advent of the Internet, universities relied heavily on research articles in journals mostly published by commercial publishing houses and made available by subscription to libraries that could afford them (Bashorun, Jain, Sebina, & Kalusopa , 2013). OA emerged as a global movement in the academic sphere providing an alternative model of scholarly publishing to free online access to scholarly literature. The OA movement was led by the quantitative increase in scientific information across the world attributed by the rapid growth of research articles, the rapid growth of specific journals, the increase in prices of journal subscriptions, and the tight library budgets that hardly ever rose (Arora, 2008; Oppenheim, 2008; Suber, 2002). As a consequence, academic institutions and libraries were forced to cut down on journal subscriptions and this created access limitations to educational resources as libraries and scholars could not get most of the required literature deemed necessary in their scholarly work which hindered research in all fields of knowledge (Alemu, 2009). The situation was particularly critical for small colleges and universities and quiet unacceptable for institutions in the developing world where budgets were non-existent (ibid).

As university library budgets continued to shrink, and fail to keep up with inflated serial costs, it became a concern that prompted many university libraries globally, to consider other means of providing research output with an alternative model for a wider and faster distribution of scholarly work without cost or at a lower cost or even for free or with no copyright barriers to end users. Therefore, the birth of OA which is viewed as one of the means of addressing the escalating journal prices as well as addressing the problem of limited access to information to an increasing volume of scientific literature (Lynch 2003; Möller, 2006; Oppenheim, 2008; Mullen, Laura Bowering, 2010) was the remedy for some libraries. For low and middle-income countries (LMIC) where most African countries belong, OA breaks traditional financial barriers and allows unrestricted, equal access to scholarly information (Tennant, et al., 2016). Although it is the global pattern, the level of awareness and deployment of OA movement follows the paths of digital advantage (McNeill, 2007). The movement gained tremendous pace, perhaps due to the development in technology and increased global access to the internet (Oppenheim, 2008; Björk & Hedlund, 2012).

The OA publications can be delivered through two broad ways; the gold OA and green OA routes (BOAI, 2002; Oppenheim, 2008; Harris, 2012). Gold OA often referred to as the author-pays-model, developed by publishers, payment for publication fees or processing charges is made by either the author, the author's parent institution, research funder or another source of author-side funding so that the resulting paper can be read by anyone, anywhere, without the requirement to pay for access or wait for an embargo period (Uddin, Koehlmoos, & Hossain , 2014). Papers can be published under the gold OA model in gold OA journals, or in hybrid journals, where some authors pay to make their papers OA while other papers are published under the traditional subscription model (Oppenheim, 2008; Harris, 2012). The Green OA route is where self-archiving of accepted authors' manuscripts or other pre-publication versions are either deposited in institutional and/or subject repositories or a combination of them. The business model for green OA publishing is simply that the body maintaining the repository pays for ingest of materials, addition of metadata and other technical and administrative requirements (Oppenheim, 2008; Harris, 2012). This approach works with traditional subscription publishing but many publishers impose embargo periods and particular conditions on publication on self-archiving (Sherpa/Romeo, 2018). Nevertheless, the two approaches do not compete but rather play complimentary roles. Therefore the adoption of either or all the routes leads to the dissemination of research output across the world. While OA diminishes costs of production and distribution, other costs remain. Anderson (2004) noted that for information to be made freely and permanently available to the public, the costs of creation, publication, and distribution must be absorbed by someone other than those who wish to use it. The internet eliminates most distribution costs, but not all of them.

According to the Directory of Open Access Journals (DOAJ, 2012), the OA movement has a longer history in Sciences and Medicine than in other disciplines such as the Humanities and Social Sciences. However, the acceptance of OA has continued to spread throughout other disciplines. As of 18th January 2018, there were 10,925 OA journals registered in the Directory of Open Access Journals (DOAJ) representing 123 countries, of which 698 journals were from Africa.

In this paper, University libraries were chosen since they play key roles in information access in their institutions. These roles include collection development, managing subscription budgets, providing advice on information access, managing institutional collections, and reporting on usage of resources and services (Harris, 2012). Though this is common in traditional libraries, the roles are still core and still remain even in the OA world. Similarly, with so many universities in Africa, a lot of research is conducted through faculty academic work for different reasons including promotion and tenure, writing of thesis/dissertations as a requirement for the award of degrees, PhDs and therefore require dissemination of their research and access to research findings (Ezema, 2011). For research output to have influence, it ought to be accessible and applicable for all, thus create an impact on Africans as well as contribute to the global knowledge generation and development. Over the previous years, research generated over the years in African universities was buried in physical libraries in Africa, with very few scholars and students accessing them (Christian, 2008; Ezema, 2010). This meant that African researchers highly depended on information generated from the developed countries of Europe and the USA, thus reducing Africa to only information consumers in the global information environment (Eczema, 2011). Additionally, the limited circulation of scholarly publications resulted in the call for a way of fashioning out a proper method of disseminating scholarly research in developing countries, so as to balance the global information equation and improve the visibility and impact of research outputs in the region. OA movement is therefore a new approach that has enabled African scholars in universities to share their thoughts and exchange information with one another (Nwagwu, 2016).

In this paper, research output includes research papers that have been published in journals, conferences, and dissertations and thesis published in IRs. A faculty member is the professional who is teaching, researching, and producing scholarly works thus generate knowledge for sustainable development.

The purpose of this paper is to explore the state of the OA movement in African universities and university libraries, its influence on university libraries and research output by faculty.

Methodology

The data for this paper was collected from secondary sources by reviewing literature on the theme. The scope of the analysis was directed by the nature of the available data in general and on Africa in particular. Literature was selected from online databases (Elsevier, Emerald, Sage, Eric and Ebsco Host), International Federation of Library Associations (IFLA), print and electronic journals, conference proceedings, Google scholar, text books, websites and reports.

The state of the Open Access Movement in Africa

Available evidence suggests that due to the high prices of journal subscriptions from commercial journal publishers, developing countries struggle with access to academic information just as in developed countries, but to a greater extent and consequently with greater negative repercussions (Tennant *et al*, 2016). Scientific research findings locked behind the pay wall journals are not disseminated widely, and this leads to restricted readership and thus reducing their impact (Albert, 2006; Bjork, Roos , & Lauri, 2009). For example, in 1982 a research paper indicating why Liberia should be included in the ebola endemic zone was published under a pay wall journal, and this information was not known to Liberian officials during the 2014 ebola outbreak (Knobloch cited in

Tennant, et al., 2016). The paper was not easily discovered nor accessed, although the abstract was available in the pay walled article, evaluating the truth of the result definitely necessitated access to the full research article. In general, lack of access to information can have major adverse consequences for students and researchers, because of insufficient information to conduct their own primary research. Thus, free access to information is a prerequisite for information sharing and reuse, promotes equity, which the OA movement can provide to Africans. Since OA to scientific information is free, there is an increased audience to this information, which leads to further creation of knowledge and solutions to problems as the communication becomes more open, cheaper, easier and rapid (Ahmed, 2007).

Coupled with poor funding and the rising cost of journals, Okunoye & Karsten's (2003) observed that most university libraries in sub-Saharan Africa had to reduce the number of subscribed journals, consequently partnerships and open access models became priority items on their agendas (Prooser, 2004). In Uganda for example, Makerere University's library budget for serial publications was heavily affected by the "serials crisis" at the close of the 20th Century. In the year 2000, subscriptions to print journals that were the main source of current research literature at the University were almost scrapped off the institution's budget due to the high journal subscriptions (Kakai, 2009). This made Makerere University library suffer a research literature vacuum for some time. Fortunately, in 2001 the university was involved in a pilot phase of access to online journals under the Programme for the Enhancement of Research Information (PERI) run by the International Network for the Availability of Scientific Publications (INASP). After the INASP pilot phase, access to online journals were later supported by Sida/SAREC, with subscriptions to about 20,000 full-text online journal titles accessed country-wide by academic and research institutions in Uganda. At the time, other free online journal databases were identified and added onto the list. Access to the electronic journals calmed the situation at Makerere University, but did not eradicate the need for an online database of local scientific research (Kakai, 2009).

Given the fact that a number of researchers publish in journals owned by database owners that were still not affordable, even with external funding, it was deemed necessary to recollect such findings by advocating for self-archiving Makerere University researchers' publications in the institution repository (IR) which led to the birth of an IR at Makerere University. In relation to this, Crow (2002) pointed out that institutional repositories serve as meaningful indicators of an institutions academic quality. He further pointed out that much as the intellectual output and value of an institution's intellectual property is diffused through thousands of scholarly journals, an IR provides an avenue of concentrating the intellectual product created by a university's researchers, making it easier to demonstrate its scientific, social, financial value and thus contribute solutions to society problems.

With respect to the efforts aimed at institutionalizing open access, South Africa has made significant progress in gold open access in the past five years. Although the first open access journals in Africa actually started in Egypt with three entries in DOAJ 2002, Egypt declined in 2003 and 2004 when the DOAJ listed South Africa with three published journals in each of the years (Nwagwu, 2012). However, as of 4th February 2017, DOAJ reveals that Egypt leads in Africa with 597 journals, followed by South Africa with 62 Journals (DOAJ, 2018). Further thousands of researchers in Africa publish in international OA journals such as BIOMed Central (www.biomedcentral.com) and Public Library of Scoence - (PLoS)- (www.plos.com). In 2017, over 600 OA journals published in Africa from 15 countries were indexed in the DOAJ (DOAJ, 2017) as seen in table 1:

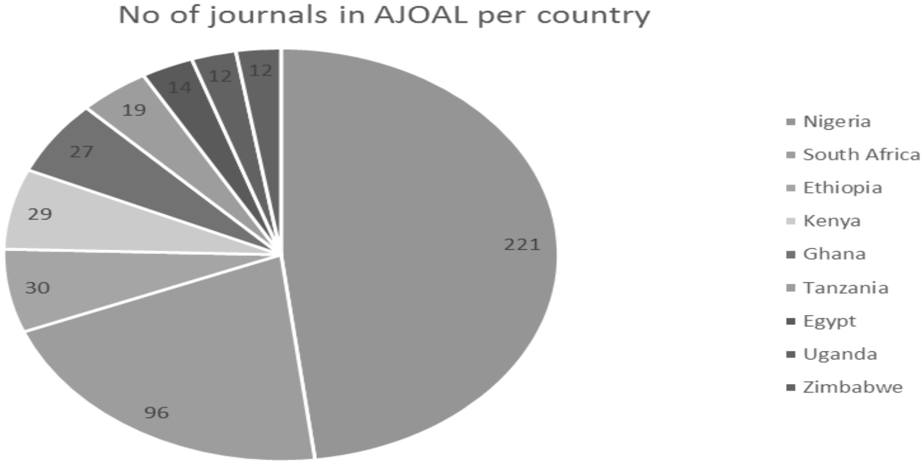
Table 1: No of African journals indexed in DOAJ

SR NO.	Country	No of journals published in DOAJ
1	Egypt	597
2	South Africa	62
3	Algeria	9
4	Nigeria	8
5	Morocco	6
6	Ethiopia	3
7	Ghana	2
8	Kenya	2
9	Libya	2
10	Tunisia	2
11	Cameroon	1
12	Congo, Republic	1
13	Madagascar	1
14	Mauritius	1
15	Uganda	1
		698Total

Source http://doaj.org 04.02.2017

As of 17th January, 2018 the African Journals Online (AJOL) (the world's largest and pre-eminent collection of peer-reviewed, African-published scholarly journals) had 521 journals and 880 Journal articles, including 221 Open Access Journals, 12743 Issues containing 149,206 abstracts, 143,423 full text articles for download, of which 82,208 are OA from nine (9) African countries. AJOL exists to make African origin research output accessible to Africans and the rest of the world. As seen in Figure 1, Nigeria has the highest number of journals (221) followed by South Africa with (96), Ethiopia (30), Kenya (29), Ghana (27), Tanzania (19), Egypt (14), Uganda and Zimbabwe each with (12) journals respectively. Most of the other African countries had less than 10 journals listed in AJOL database.

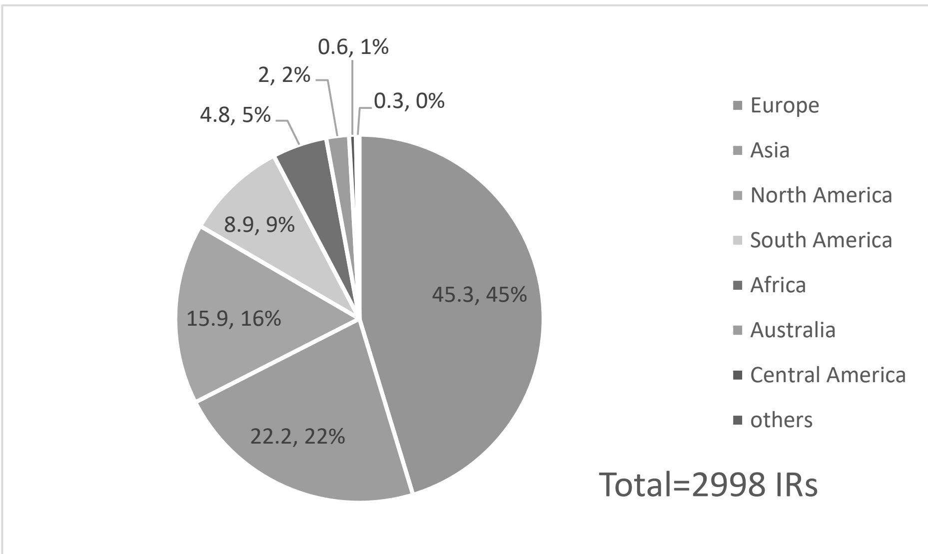
Figure 1: Showing examples of countries with the highest number of journals in the AJOL database



Source: http://www.ajol.info/index.php/index/index, 17th .01.2018

In addition, as of 17th January, 2018 Africa had 143 (4.8%) IRs (OAR), of the 2998 world's IRs (Directory of Open Access Repositories, 2018).

Figure 2: Proportion of Institutional Repositories by continent-worldwide.



Source: http://www.opendoar.org/onechart.php, 17th January 2017

Most of the institutional repositories in OpenDOAR are from universities where theses and dissertations constitute the majority of the content type followed by journal articles. Similarly, according to the (Directory of Open Access Scholarly Resources (ROAD), 2017) as of 20th October 2017, there were 348 publications from Africa of the world's 22505 publications.

There are other OA initiatives in Africa that recognize and establish the local and regional OA movement, driven by collaborative African research such as, Africa Portal, an online resource that seeks to broaden the availability, accessibility and use of research issues and policy briefs critical to Africa (AfricaPortal, 2017). Equally, in an effort to promote OA in Africa, on 29-30th January, 2015 UNESCO and NetWork of African Science Academies (NASAC), the Royal Netherlands Academy of Arts and Science, Kenya National Academy of Sciences and Kenya Ministry of Education, Sciences and Technology organized a consultative forum that took place in Kenya, and brought on board 20 African countries to provide expert intervention for research and development in Africa.

It was also observed from the literature and from several OA policy websites that most African countries and universities have not adopted and implemented open access policies. For example, as of 17th January 2018, only 32 African universities and other research institutions in 12 African countries had implemented open access policies and thesis mandates with (EIFL, 2018). Similarly, as of 17th January 2018 the Registry of Open Access Repository Mandates and Policies (ROARMAP), 2018) had only 24 registered policies from Africa (Eastern Africa-10, Northern Africa-3, Southern Africa-9, and West Africa-2) in the whole of 54 African countries. This number is low compared to other continents like Europe (546) and America (214). According to sherpa/romeo, (2018) as of 17th January 2018, only 41 universities and other institutions from 13 countries have signed OA policies with Sherpa/romeo. In line with this, (Nwagwu, 2016) noted that the adoption of templates of open access policies from developed countries by African countries may result in further challenges to science development in the region if not addressed by the stakeholders. Other OA African initiatives include the scholarly communication in Africa (SCA), 2017) programme that aim at increasing African universities contribution to regional and global knowledge production. However, there is also evidence of individual open access initiatives and new publishing houses in Africa that are largely underdeveloped and sometimes predatory (Nwagwu, 2016). These new and upcoming open access initiatives and publishing houses in Africa provide answers for younger and weaker scholars who do not care about the quality of journals in which they publish (Nwagwu, 2016).

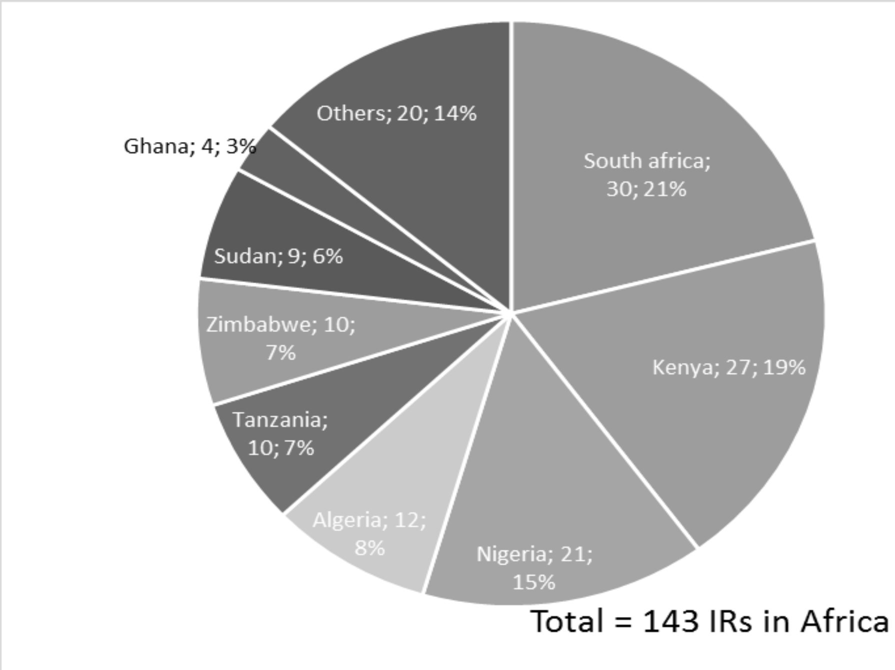
Although there are OA activities and initiatives in Africa, it is observed that, there is a low level of research in many African countries. Even AJOL, a database dedicated to indexing journals from Africa has limited journals compared to the countries in Africa. In line with this, Mammo and Ngulube (2015) and Nwagwu (2016) observed that the situation above is partly brought by the lack of OA policies in most African universities, the low level of social and technological development, low internet bandwidth, poor champions (University Librarians), lack of awareness by faculty, and limited funding both at institutional and government level . The same author further noted that, there exists an informal expression of concern about the quality of sources through which scholars are publishing, but similar concern about what students and their teachers are reading is not pronounced. This confirms an earlier study by (Nwagwu, 2006) who observed that the benefits of open access to Africa were still tied to the generosity of the developed countries, and that African home-grown initiatives were few and economically not strong.

The influence of the open access movement on university libraries and faculty research output in Africa

In libraries, the movement toward integrating free digital scholarly material and products has certainly affected the technical services area in many ways most prominently the development of IRs that have been initiated and operated by academic librarians and encouraging teaching faculty to self-archive all their scholarly works (Carter et al., 2007; King et al. 2006; Palmer et al., 2009; Mullen, 2010). And University Libraries are using these IRs to collect their institution's publications (Harris, 2012), which enhances visibility of the university's research output.

Previous studies indicate that there has been progress in the establishment of IRs in university libraries in Africa. A study by Kakai (2009) indicated that in 2009 the African continent had 23 visible institutional repositories from eight (8) countries with 15 IRs from South Africa. An earlier work by Christian (2008) reported that Africa had twenty (20) IRs with 14 from South Africa; Chilimo (2015) reported ninety-four that Africa had 94 (4%) of the repositories worldwide) with 42 (44%) from South Africa. In this study as of 23rd January 2018, there were at least 143 IRs in Africa of the listed of the 2998 IRs worldwide. According to OpenDOAR South Africa is leading with 30 (21%), Kenya 27 (19%), Nigeria 21 (15%), Algeria 12 (8%), Tanzania 10 (7%), Zimbabwe 10 (7%) Sudan 9 (6%), Ghana, 4 (3%) while other countries 20 (14%) (Directory of Open Access Repository, 2018). However, this number continues to change as more IRs are listed every day. The chart in figure 3 below is based on the number of IRs in each country.

Figure3: Proportion of Institutional Repositories by Country in Africa



Source: http://opendoar.org, 23rd January 2018

It is observed that many more universities in Africa are in the process of developing their IRs. Some of them are already on the World Wide Web (or Web) but not yet listed in OpenDOAR, and some still operate on their institutions' local area network (LAN), for example in Uganda; Uganda Martyrs University (2017) and Uganda Christian University (2017) have IRs on their websites but not yet registered in the OpenDOAR database. Even though there is evidence of IRs in Africa, from the above data and as compared to the number of repositories (2998 repositories) worldwide, it is observed that most African universities have not yet positioned themselves globally for research sharing and visibility therefore, the extent of OA impact in Africa remains to be seen.

In addition, university libraries have played an active role in the expansion of the OA movement by promoting it in a variety of ways, such as: including records for OA journals in their public catalogues and e-journal lists, collaborating with their institutions to establish IRs, participating in, and at times, leading institutional initiatives to encourage faculty to deposit their work in the institution's repository, digitizing historical collection and being active OA publication contributors (for self-archiving) and consumers (for access, reading, and citing), and managing OA repositories (Carter et al., 2007; King et al. 2006; Palmer et al., 2009 ; Cryer & Collins, 2011).

University librarians are well-positioned to assist researchers in using data throughout their workflow, from background work to discovering existing data sets, through developing protocols for capturing data to disseminating data through their institutional repositories (Luce, 2008; Reilly et al., 2011). Libraries have been providing E-resources to users in higher institutions and have connections to institutional repository initiatives. The wider discussions of scholarly communication means that librarians have played "a natural leadership role for data services, as they are the one place in their institution that sees the broad picture across all constituents or subject disciplines" (Tenopir, 2013).
University libraries have traditionally provided faculty support by concentrating on the "end products" of scholarship such as journal articles, in addition to providing assistance and instruction in information discovery, and may be ideally situated to assume a more active role in offering data management assistance in the OA movement (Jaguszewski & Williams, 2013; Tenopir, 2013). Kriegeskorte & Deca (2012) pointed out that OA is widely accepted as desirable and has become a reality in many academic spheres, (Tennant, et al., 2016) argued that OA affects academia through association with a higher documented impact of scholarly articles, as an outcome of open availability of these articles that are used as teaching medium for lectures or continued research (De beer & Jennifer, 2005; Thaotip, 2011).

The major arguments in favor of OA in universities include the evidence that work that is openly available leads to greater audience, generates more academic citations and the speed of citation accumulation (Tennant, et al., 2016; Aman, 2014; Gentil-Becot, Mele, & Brooks, 2010; Thaotip, 2011; Swan & Brown (2005). In line with this, several studies (Kurtz, et al 2005; Eysenbach, 2006; Henneken et al, 2006) found out that the average number of citation of OA articles was higher compared to non-OA articles. It was also observed that in journals that were widely available in libraries, open access articles were more recognized and cited by peers than non-OA articles published in the same journals. Pandian et. al, (2008) found out that, OA articles were cited 25-250% more than non-open access articles from the same journal, giving the users access to and use of full text of all the scholarly journal articles.

It was observed from the literature that the more citations the publication of a researcher attracts, the higher the impact and influence of a researcher become (Solms & Solms, 2016). Moreover, citation counts remain fundamental for academic impact as the 'currency units' for researchers, research groups, institutes and universities (Diamond AM as cited in Piwowar, Day, & Fridsma, 2007; Tennant, et al., 2016). This in turn motivates university researchers for more author publications, increases the research impact factor of authors and universities leading to visibility of the university, researchers and high research rankings. It is believed that university research output demonstrates academic success both to the researchers and sponsoring institutions. With this, university academics are on pressure to “publish or perish” or else their career suffers as a result (Solms & Solms, 2016). Solms and Solms (2016) further points out that research output can be deemed as good or worthwhile if they are read, used and/or cited by others thus making an impact. However, research that is not disseminated would not be seen, read, used or cited by others. Such research can be deemed unproductive, or even useless (Crow, 2002). It is therefore better to publish in OA journals because it offers a wider audience to use, cite and extend the field of knowledge even further. However, (Swan, 2010) cautioned that citing ones work rests upon the quality, relevance, originality and influence of the piece of work. As such better articles from OA will gain more as they will be cited more. The author further adds that, research output that does not add or adds little or nothing at all to the development of knowledge in a particular field receive little or no citation from other researchers, even if the research findings can be readily accessed. Since most, if not all, researchers investigate to make an impact and nurture their research influence, researchers should attempt to exploit the number of citations that their research publications attain (University of Western Australia, 2016; Kelly & Jennions, 2006).

In addition, licensed OA works play a major role in university education, including re-use in classes and for research dissertations and thesis (Tennant, et al., 2016). University authors frequently give the copyright to the publishers in exchange for the perceived prestige of publishing in one of their venues. Müller-Langer and Watt (2010) for example, noted that in the years before the OA movement, the professional publishers acted as third party that simply filtered the research in terms of quality and organized it into convenient packages, which it then sold back to the scientific community in the form of journals. Open access signifies a power shift from publisher-owned to author-owned rights to research (Shavell, 2010; Tennant, et al., 2016). This shift allows for wider re-use of research information (Tennant, et al., 2016).

The other argument in favor of OA among universities is that, OA allows academic researchers to use automated tools to mine the scholarly literature which forms the basis for a robust scholarly ecosystem (Tennant, et al., 2016). Bloudoff-Indelicato (2015) noted that, to mine OA journals, one only needs the technical skills. Yet, to mine closed access journals, one needs to sign or negotiate access conditions, even if legitimate access to the articles has already been bought. Text and data mining (TDM) is not only a knowledge-generation tool; it also allows for automated screening for errors and automated literature searches that renew scientific discovery (Pal, 2011). With TDM it becomes possible to easily compare the researcher's results with those of the published literature, identify convergence of evidence and enable knowledge discovery (Chen & Liu, 2004; Natarajan *et al.*, 2006). TDM also decreases the time dedicated to the search for relevant information in the vast amount of scholarly literature by categorizing information, highlighting and annotating relevant results according to users' needs and research profile, which saves the time of the researcher (Leitner & Valencia, 2008; Shatkay *et al.*, 2008; Porter *et al.*, 2002; Harmston, Filsell, & Stumpf, 2010)

The overall OA movement has become conjoined with the drive for Open Data and this has led to data sharing. Publicly sharing data is fundamental to scientific progress, because data leads to the knowledge generated in research articles, allows other researchers to examine results and reproduce and validate research results / experiments, examine new hypotheses, identify any methodological errors, minimize duplication of resources, and enables the exploration of topics not visualized by the primary investigators and ensures the sustainability and integrity of stored data (Gurria, 2007; Hanson, Sugden , & Alberts, 2011; (Reilly, Schallier, Schrimpf, Smit, & Wilkinson, 2011; Borgman, 2012; Thessen &Patterson, 2011 ; Vision, 2010).

Although there are hundreds of possible benefits of the OA movement to university libraries and scholars, there are debates about the quality of OA publications and the danger of making erroneous scientific publications OA (Shuva & Taisir, 2016). For example, there has been the emergence of predatory journal publishers that charge authors for their publication without giving quality peer-review, copy-editing, and indexing services and moreover, with the content not valid or not validated (Butler, 2013; Tin et al 2014). As pointed out by several authors, the history of predatory journals, and the identity of their proprietors, is often unknown. There is no archiving practice leading to lack of access to their back numbers, and there is doubt about the sincerity of their locations (Beall, 2012, Beall, 2015; Berger & Cirasella, 2015; Butler, 2013),

The term predatory was first used by Jeffrey Beall, a librarian at Colorado University in 2010 and thereafter he developed a list of predatory publishers that unprofessionally exploit the OA model for profit. Beall has ever since maintained a regularly updated list of ‘‘potential, possible, or probable predatory scholarly open-access journals’’ on his website until 2017 when the list went missing. Predatory journals exploit the idea of the author pays gold model by setting up bogus publishing operations and charging a fee but not providing the promised publishing services in return, predatory journal publishers do not follow accepted scholarly publishing industry standards and seek only to profit from author fees and often target authors who are afraid of peer reviews (Bohannon, 2013; Beall, 2012).

In 2016, predatory journals nearly rose to 930 (Beall, 2016). While sometimes publicly accessible via Internet searches of the specific journal or publisher, these publications are not indexed in reputable library systems (e.g., PubMed) and are undiscoverable through the standard searches. Several authors have pointed out that most of these journals emanate from Africa (Xia 2015; Nwagwu, 2016). In line with this (Ngwagwu & Makhubela, 2017) adds that this has been mostly brought by the poor and unprofessional manner in which most OA publishers from Africa are conducting scholarly publishing. Nevertheless, in an earlier study (Nwagwu, 2013) pointed out that, although many of these so-called predatory journals and clusters might actually be fake; some could be Africa initiatives whose products and proprietors might be considered to have limited or lack of OA resources (Nwagwu, 2013).

Researchers have been found to fall victim (prey) of using predatory OA journals for their research activities and this has serious implication for the integrity of their research output in the international scholarly community (Ayeni , 2017). In Africa, a study at the Centre for Africa on evaluation, science and technology at Stenllenbosch University found out that between 2005 and 2004, more than 4,200 South African academic articles were published in 47 journals classified as predatory (Africa check, 2017).

The ‘publish or perish’ mentality among most universities has prompted authors to haphazardly publish in any journal which has little or no peer review requirement (Xia, 2015). Young researchers and doctoral students in Africa are considered to be the major victims of “predatory” journals, a problem catalyzed by an increasing pressure on them to “publish or perish” (Shaw, 2013).

Using predatory journals has gross negative influence on the quality of ones work. Since the information published in such articles is deprived of thorough peer review and standardization, such articles would therefore be less qualitative. Such articles are likely to be full of plagiarized ideas that damage the integrity of the authors and his/her institutions. If such works are used for knowledge acquisition and teaching, there would be less qualitative learning, which cannot stand the test of time, especially in scholarly writing (Ayeni, 2017). If the issue of predatory journals is not controlled, it is likely to increase the knowledge divide, which may lead to African researchers being excluded from the knowledge sharing society. In line with this, Shuva and Taisir (2016) suggested that authors interested in submitting their papers to open access journals should first ask the following questions: Does the journal offer a blind peer-review process? What is the impact factor of the journal? Does the journal ensure reasonable speed of publication after acceptance? Is the editorial board comprised of figures internationally recognized in their respective subject fields? Is the information about the editorial board clear (university affiliation, institutional email addresses of the editorial board members, the online presence of the editorial board members, etc.)?

Conclusion

In view of the significance of the OA movement in Africa, it becomes evident that universities and university libraries have made strenuous efforts to ensure continued access to scholarly information. University libraries have been active in including records for OA journals in their public catalogues and e-journal lists, collaborating with their institutions to establish institutional repositories, participating in, and at times, leading institutional initiatives to encourage faculty to deposit their work in the institution's repository. The OA movement has enabled African scholars in universities to share their thoughts both nationally and internationally. However, the OA movement has stemmed with problems like predatory publishing that has likely been brought by the slagon "Publish or Perish". This has been the greatest challenge that affects most African university scholars. The literature further indicated that the uptake of open access has been low in African universities as compared to universities from developed countries as revealed by statistics in the number of IRs, OA journals, adoption and implementation of OA policies from Africa as compared to the western world. This is due to the fact that OA depends more on information technology and yet technology infrastructure in Africa is still underdeveloped. And as such African university scholars are seen mostly as users rather than contributors to global knowledge generation and sharing. There is also poor championship by University Librarians in initiating OA, lack of awareness by faculty, and limited funding both at institutional and government level.

Recommendations

- University librarians should put in more effort to spearhead OA initiatives.
- University Librarians should explain OA benefits to both university staff and students
- The University librarians should encourage teaching faculty colleagues to publish in OA journals.
- University faculty should archive all their scholarly work given that majority of contribution of information materials in the OA journals and IR is expected from them.
- University librarians and faculty professionals should aim at making the OA movement a success through collaborative work. It should be clear to

Librarians and Faculty staff that without their collaborative effort it will be hard to realize the effect of OA in African universities.

- University authors should use their research outputs to enhance their University global visibility through OA journals
- Scholarly publishing in OA reputable journal outlets should be imperative in universities, University faculties should be mindful of how to choose relevant and reliable peer reviewed OA journals before submitting manuscripts for publication to avoid publishing in predatory journals. To this, those enforcing compliance and quality should quest those publishers to make sure that all journal publishers surrender their publications to indexers and use bibliometric methods to judge their quality, influence and impact. In addition, there is also a great need for African researchers to carefully investigate the reputation of OA journals before sending their work for publication or visit the DOAJ, use open access evaluation sites such as http://thinkchecksubmit.org and http://scimagojr.com before submitting their research for publication.
- University publishers should aim at building their reputation step by step through publishing with reputable OA journals.
- University faculty should avoid publishing in predatory journals where there is little or poor quality peer review.
- Careful investigations should be carried out prior to publishing with any journals in case they turn out to be predatory journals.

- There is need to study the adoption and implementation of OA policies in universities this will help shed some light on how to successfully develop IRs.
- Finally, this paper was based on literature review. The topic can be further investigated through an empirical research to understand the context based on participants' perspective from different stakeholders implementing OA in universities of Africa

References

Adcock, J., & Fottrell,, E. (2008). The North-South information highway : case studies of publication access among health researchers in resource-poor countries. *Global health action, 1*(1).

Africa Check. (2017). *Guide : How to spot predatory academic journals in the wild*. Retrieved from https://africacheck.org/factsheets/guide-how-to-spot-predatory-academic-journals-in-the-wild/.

Africa Portal (2017). Retrieved April, 23, 2017, from https://www.africaportal.org/about-us.

African Journals Online (AJOL). (2018). *Promoting Access to African Research*. Retrieved January 17, 2018, from http://www.ajol.info/index.php/index/index

Ahmed, A. (2007). Open access towards bridging the digital divide–policies and strategies for developing countries. *Information Technology for Development, 13*(4), 337-361.

Albert, K. M. (2006). Open access: Implications for scholarly publishing and medical libraries. *Journal of medical library association, 94*(3), 253-262.

Alemu, G. A. (2009). The role of open access in fostering knowledge sharing and collaboration in Ethiopia: a case study. *Qualitative and Quantitative Methods in Libraries, 262*.

Aman, V. (2014). Is there any measurable benefit in publishing preprints in the arxiv section quantitative biology? *CoRR*. Retrieved from https://arxiv.org/abs/1411.1955

Anderson, R. (2004). Open access in the real world : confronting economic and legal reality. *College and Research Libraries News*. Retrieved october 17, 2017, from http://arizona.openrepository.com/arizona/simple-search?query=Anderson%2C+R.+%282004%29.+Open+access+in+the+real+world%3A+confronting+economic+and+legal+reality.+College+and+Research+Libraries+News.&field1=ANY&quicksearch=true&submit_search=Go&submit_sear

Arora, J. (2008). Open access publishing : an overview, in proceedings of the 6th convention. *PLANNER*, (pp. 23-54).

Arunachalam, S. (2004). Open access and the developing world. *The national medical journal of india, 17*(6), 289-291.

Ayeni, P. O., Ayeni, P., Adetoro, N., & Adetoro, N. (2017). Growth of predatory open access journals: implication for quality assurance in library and information science research. *Library Hi Tech News, 34*(1), 17-22.

Bashorun, M., Jain , P., Sebina , P., & Kalusopa , T. (2013). “Open access publishing: Acatalyst for scholarly research publication". *European Journal of Academic Research, 1*(2), 84-99.

Beall, J. (2012). Predatory publishers are corrupting open access. *Nature, 489*(7415), 179. Retrieved november 12, 2016, from http://www.nature.com/polopoly_fs/1.11385!/menu/main/topColumns/topLeftColumn/pdf/489179a.pdf

Beall, J. (2014). *List of Publishers: Beall’s List: Scholarly Open Access.* Retrieved June 23, 2017, from http://scholarlyoa.com/publishers

Beall, J. (2015). Predatory journals and the breakdown of research cultures. *Information Development, 31*(5), 473-476. doi:10.1177/0266666915601421.

Beall, J (2016). List of predatory Journals and Publishers. Retrieved September 21, 2017, from http://beallslist.weebly.com

Beer, D., & Jenniffer, A. (2005). *Open access scholarly communication in South Africa : a role for national information policy in the national system of innovation.* South Africa: University of Stellenbosch.

Berger, M., & Cirasella, J. (2015). Beyond Beall's list: Better understanding predatory publishers. *College and Research Libraries, 76*(3), 132–135.

Bjork, B., Laakso, M., Welling, P., & Paetau, P. (2013). Anatomy of green open access. *Journal of the association for information science and technology, 65*(2), 237-250. doi:10.1002/asi.22963

Bjork, B., Roos , A., & Lauri, M. (2009). Scientific journal publishing : yearly volume and open access availability. *Information research, 14*(1).

Bloudoff-Indelicato, M. (2015). Text-mining block prompts online response. *Nature, 527*(7579), 413.

Bohannon, J. (2013). Who's afraid of peer review? *Science, 342*(6154), 60-65.

Borgman, C. (2012). The conundrum of sharing research data. *Journal of the American Society for Information and Technology, 63*(6), 1059-1078.

Bradley, F. (2016). 'A world with universal literacy' The role of libraries and access to information in the UN 2030 Agenda. *IFLA Journal*, *42*(2), 118-125.

Budapest Open Access Initiative. (2001). *Budapest Open Access Initiative.* Retrieved from http://www.soros.org/openaccess/read.shtml

Butler, D. (2013). "Investigating journals: The dark side of publishing". *Nature, 495*, 433-435.

Carter, H., Snyder , C., & Imre, A. (2007). " Library faculty publishing and intellectual property issues : a survey of attitudes and awareness",Portal. *Libraries and the academy, 7*(1), 65-79.

Chen, S. Y., & Liu, X. (2004). The contribution of data mining to information science . *Journal of information Science, 30*(6), 550-558.

Christian, G.E. (2008), "Issues and challenges to the development of open access institutional repositories in academic and research institutions in Nigeria", research paper, *International Development Research Centre (IDRC*), Ottawa.

Cryer, E., & Collins, M. (2011). Electronic Journal Forum : Incorporating Open Access into Libraries. *Serials Review, 37*, 103-107.

Directory of Open Access Journals (DOAJ) (2018). *Directory of Open Access Journals*. Retrieved February, 4, 2017, from http://doaj.org

Directory of Open Access Repositories (DOAR). (2018). *Proportion of Repositories by continent-Worldwide*. Retrieved January, 17, 2018 from http://opendoar.org

Directory of Open Access Repositories (DOAR). (2018). *Proportion of Repositories by country-Africa.*Retrieved January, 17, 2018 from http://opendoar.org/find.php?cID=Africa&title=Africa.

Directory of Open Access Resources (ROAD) (2017). *Directory of Open Access Scholarly Resources*. Retrieved October 20, 2017, from Directory of Open Access Scholarly Resources: http://road.issn.org/en

Drott, M. (2006). Open Access. *Annual Review of Information Science and Technology (ARIST), 40*, 79-109.

eifl. (2018). *Open Access policies*. Retrieved 2018, from Jauary, 17, 2018 http://www.eifl.net/programme/open-access-programme/open-access-policies

Eloff, K., Borgstrom, L., & Cassells, L. (2013). Publishing in the digital environment. Univrsity of Pretoria. Retrieved september 23, 2017, from http://pub310.pressbooks.com/

Eysenbach, G. (2006). Citation advantage of open access articles. *PLoS biology, 4*(5) e157. Retrieved October 12, 2017, from http://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.0040157&imageURI=info:doi/10.1371/journal.pbio.0040157.t003

Ezema, I. (2011). Building open access institutional repositories for global visibility of Nigerian scholarly publication. *Library Review, 60*(6), 473-485. doi:10.1108/00242531111147198

Fernandez, L. (2006). Open access in india : an evaluation partnership 1. Retrieved September 23, 2017, from https://journal.lib.uoguelph.ca/index.php/perj/article/viewArticle/110#.VoRGBzbSnIU

Gentil-Becot, A., Mele, S., & Brooks, T. (2010). Citing and reading behaviours in high-energy physics. *Scientometrics, 84*(2), 345-355.

Ghosh, S., & Das, A. (2007). Open access and Institutional repositories : a developing country perspective. *IFLA Journal, 33*(3), 229-250. doi:10.1177/0340035207083304.

Hanson, B., Sugden , A., & Alberts, B. (2011). Making data maximally available. *Science, 331*(6018), 649. Retrieved from http://dx.doi.org/10.1126/science.1203354.

Harmston, N., Filsell, W., & Stumpf, M. P. (2010). What the papers say : text mining for genomics and systems biology. *Human genomics, 5*(1), 17.

Harris, S. (2012). *Moving towards an open access future : the role of academic libraries : a report on a roundtable commissioned by SAGE in association with the British Library.* SAGE.

Henneken, E. A., Kurtz, M., Eichhorn, G., Accomazzi,, A., Grant, C., & Murray, S. (2006). Effect of e-printing on citation rates in astronomy and physics. arXiv preprint cs/0604061.

Herb, U. (2010). Sociological implications of scientific publishing : Open access, science, society, democracy and the digital divide. *First Monday, 15*(2). doi:10.5210/fm.v15i2.2599.

Jaguszewski, J. M., & Williams, K. (2013). New roles for new times: Transforming liaison roles in research libraries. Retrieved January 21, 2017, from http://www.arl.org/storage/documents/ publications/NRNT-Liaison-Roles-final.pdf

Kakai, M. (2009). The challenges of advocating for open access through institutional repository building : experiences from Makerere University, Uganda. *World Library and Information Congress : 75th IFLA general conference and council.* Milan, Italy.

Kelly, C. D., & Jennions, M. (2006). The h index and career assessment by numbers. *Trends in Ecology & Evolution, 21(4), 167–170.*

King, C., Harley , D., Earl-Novell, S., Arter , J., Lawrence, S., & Perciali, I. (2006). Scholarly Communication : academic values and sustainable models, center for higher education, University of California.

Knobloch, J., Albiez, E., & Schmitz , H. (1982). A serological survey on viral haemorrhagic fevers in Liberia. *Annales de l'Institut Pasteur/Virologie, 133*(2), 125-128.

Kriegeskorte, N., Walther , A., & Deca , D. (201). An emerging consensus for open evaluation: 18 visions for the future of scientific publishing. *Frontiers in computational neuroscience,6*.

Kriegeskorte, W., & Deca, D. (2012). An emerging consensus for open evaluation. *Front Comput Neurosci.*

Kurtz, M., Eichhorn, G., Accomazzi , A., Grant , C., Demleitner, M., Henneken, E., & Murray, S. (2005). The effect of use and access on citations. *Information Processing and Management, 41*(6), 1395-402.

Laakso, M. P., Welling, H., Bukvoca, L., Nyman, B., Björk, B., & Hedlund, T. (2011). The development of open access journal publishing from 1993 to 2009. *PLoS ONE 6:e20961*.

Leitner, F., & Valencia,, A. (2008). A text-mining perspective on the requirements for electronically annotated abstracts. *FEBS letters, 582* (8), 1178-1181.

Luce, R. (2008). *A new value equation challenge: The emergence of eresearch and roles for research libraries. No brief candle: Reconceiving research libraries for the 21st century —Council on Library and Information Resources.* Retrieved from http:// www.clir.org/pubs/reports/pub142/contents.html/luce.html).

Lynch, C. (2003). "Check out the new Library". *Ubiquity, 4*. Retrieved October 12, 2017, from http://www.acm.org/ubuiquity/interviews/pf/clynch1.html

MacMillan, D. (2014). Data sharing and discovery: what librarians need to know. *The Journal of Academic Librarianship, 40*(5), 541-549.

Mammo, Y., & Ngulube, P. (2015). Academics' use and attitude towards open access in

selected higher learning institutions of Ethiopia. *Information development*, *31*(1), 13-26.

Möller, A. (2006). *The case for open access publishing , with special reference to open access journals and their prospects in South Africa.* South Africa: University of the Western Cape.

Mullen, L. B. (2010). *Open access and its practical impact on the work of academic librarians : collection development, public services, and the library and information science literature.* New Delhi: Chandos publishing.

Müller-Langer, F., & Watt, R. (2010). Copyright and open access for academic works . *Review of Economic Research on Copyright Issues., 1*(7), 45–65.

Natarajan, J. B., Dubitzky, ,. W., Hack, ,. C., Zhang, ,. Y., DeSesa, ,. C., & Bremmer, ,. E. (2006). Text mining of full-text journal articles combined with gene expression analysis reveals a relationship between sphingosine-1phosphate and invasiveness of a glioblasoma cll line. *BMC bioinformatics, 7*(1), 373.

Nwagwu, W. (2012). "Organising and Monitoring Research Production and Perfomance in Africa : towards an African citation index". In electronic publishing in Africa in the didgital age, ed. *CODESRIA* (pp. 91-109). Dakar, Senegal: Miriam Conteh-Morgan and Benard Dio.

Nwagwu, W. (2013). Open access initiatives in Africa-structures, incentives and disincentives. *The journal of Academic Librarianship, 19*(1).

Nwangwu, W. (2016). Open Access in the Developing Regions : situating the altercations about predatory publishing. *Canadian Journal of Information and Library Science, 40*(1), 58-80.

Nwagwu, W., & Makhubela, S. (2017). Status and Performance of Open Access Journals in Africa. *Mousaion*, *35*(1), 1-27.

Okunoye, A., & Karsten, H. (2003). Global access to knowldge : findings from academic organisations in sub-Saharan Africa. *Information Technology & People, 16*(3), 353-373.

Oppenheim, C. (2008). Electronic scholarly publishing and open access. *Journal of Information Science, 34*(4), 577-590. doi:10.1177/0165551508092268

Pal, J. (2011). Usefulness and application of data mining in extracting information from different perspectives. *Annals of Library and Information Studies, 58,* 7-16.

Palmer, K., Dill , E., & Christie, C. (2009). “Where there’s a will there’s a way? Survey of academic librarian attitudes about open access. *College and Research Libraries, 70*(4), 315-35.

Pandian. R, Nithyanandam, K., Dhanakar , Arul, M., & Rajasekar, V. (2008). Open access Journals: a study. Retrieved from http://ir.inflibnet.ac.in/bitstream/1944/1128/1/13.pdf

Piwowar, H. A., Day, R., & Day, R. (2007). Sharing detailed research data is associated with increased citation rate. *PloS one, 2*(3). doi:doi.org/10.1371/journal.pone.0000308

Porter, A., Kongthon, A., & Lu, J. C. (2002). Research profiling : improving the literature review. *Sciencentometrics, 3*(53), 351-370.

Poynder, R. (2015). Open access and the research excellence framework : strange bedflows yoked together by HEFCE. *The winnower*. Retrieved October 12, 2017, from https://thewinnower.com/papers/open-access-and-the-research-excellence-framework-strange-bedfellows-yoked-togetherby-hefce

Prosser D (2003). From here to there: a proposed mechanism for transforming journals from
closed to open access. *Learned Publishing, 16(3), 163–166.*

Registry of Open Access Repository Mandates and Policies (ROARMAP) (2018). Retrieved January, 17 , 2018, from http://roarmap.eprints.org/view/country/

Reilly, S., Schallier, W., Schrimpf, S., Smit, E., & Wilkinson, M. (2011). *Report on intergration of data and publications.* Retrieved from http://www.alliancepermanentaccess.org/

Rens, A. and Kahn, R. (2009), "Access to knowledge in South Africa: part of the access to

knowledge research series", available at: www.yaleisp.org/wp-content/uploads/2009/10/ A2K-in-SA.pdf (accessed 21 December 2017).

Sarah, G. (2013). *A week of open access conferencing: Part 1.* Retrieved from http://Openuct.uct.az/blog/week-open-access-conferencing-part-1

Scholarly Communication in Africa (SCA) (2017, 23 February). *Scholarly Communication in Africa (SCA)*. Retrieved May, 23, 2017 from www.scaprogramme.org.za

Shatkay, H. P. (2008). Multi-dimensional classification of biomedical text : toward automated, practical provison of high-utility text to diverse users. *Bioinformatics, 24*(18), 2086-2093.

Shavel, S. (2010). Should copyright of academic works be abolished? *Journal of Legal Analysis, 2*(1), 301-358.

Shaw, C. (2013). *Hundreds of open access journals accept fake science paper. The Guardian.* Retrieved October 14, 2017, from https://www.theguardian.com/higher-education-network/2013/oct/04/open-access-journals-fake-paper

Shen, C., & Bjork, ,. B. (2015). 'Predatory open access' : a longitudinal study of article volumes and market chracteristics. *BMC Medicine, 13*(1), 230.

Sherpa/Romeo. (2018). *Publisher copyright policies and self-archiving*. Retrieved January 23, 2018, from http://sherpa.ac.uk/romeo

Shuva, N., & Taisir, R. (2016). Faculty members' perceptions and use of open access journals. *IFLA Journal, 42*(1), 36-48.

Solms, R. V., & Solms, B. (2016). Publish or perish – but where? *SACJ, 28*(1). Retrieved from http://dx.doi.org/10.18489/sacj.v28i1.394

Suber, P. (2002). Open access to the scientific journal literature. *Journal of Biology, 1*(1), 1-3.

Suber, P. (2012). *''Open Access Overview.''*. Cambridge, MA: MT Press. Retrieved from http://www.earlham.edu/~peters/fos/overview.htm

Swan, A. (2010). *The open access citation advantage: Studies and results to date.* United Kingdom: University of Southmpson. Retrieved October 12, 2017, from http://eprints.ecs.soton.ac.uk/18516/

Swan, A., & Brown , S. (2005). *Open Access Self-Archiving: An Author Study.* Cornwall: Key perspectves Limited. Retrieved September 10, 2017, from http://cogprints.org/4385/1/jisc2.pdf

Tennant, J. P., Waldner, F., Jacques, D., Masuzzo, P., Collister, L., & Hartgerink, C. (2016). The academic, economic and societal impacts of open access: an evidence-based review. *F1000Research, 5.*

Tenopir, C. (2013). Research data services : a new focus for librarians. *Consortium on core Electronic Resources in Taiwan (Concert proceedings).* Taiwan.

Thaotip, L. (2001). Impact of Open Access Resources on LIS Scholars in Thailand. *Asia Pacific Journal of Library and Information Science, 1*(1), 43-57.

Thessen, A. E., & Patterson, D. (2011). Data issues in the life sciences. *ZooKeys, 51*(150), 15-51.

Tin, L., Ivana, B., Biljana, B., Ljubica, I., Dragan, M., & Dusan, S. (2014). Predatory and Fake Scientific Journals/Publishers-a global outbreak with rising trend : a review. *Geographica Pannonica, 18*(3), 69-81.

Uddin, M., Koehlmoos, T., & Hossain , S. (2014). An overview of open access (OA) initiativs. *Library philosophy and practice*. Retrieved september 10, 2017, from http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article¼2822andcontext ¼libphilprac

Uganda Christian University Library (2018). Retrieved 23rd, January, 2018 from http://library.ucu.ac.ug/

Uganda Martys University Repository (UMU IR) (2018). Retrieved 23, January, 2018 from http://ir.umu.ac.ug/

United Nations Educational, Scientific and Cultural organisation (UNESCO). (2010). *" Global Open Access Portal"*. Retrieved May 23, 2017, from http://www.unesco.org/new/en/communication-and-information/ portals-and-platforms/goap/

University of Australia.(2016). *Research impact and profiles: Citation impact.* Retrieved June 23, 2016, from http://guides.is.uwa.edu.au/c.php?g=325233&p=2177977

Veletsianos, G., & Kimmons, , R. (2012). Assumptions and challenges of open scholarship . *The International Review of Research in Open and Distributed Learning, 13*(4), 166-189.

Vision. (201). Open data and the social contract of scientific publishing. *BioScience, 60*(5), 330-331.

Xia, J. (2015). Predatory journals and their article publishing charges. *Learned Publishing, 28*(1), 69-74.

THE ROLE OF LIBRARIANS IN TRANSFORMING THE WORLD THROUGH OPEN DATA AND OPEN SCIENCE

Ina Smith
Project Manager
African Open Science Platform
Academy of Science of South Africa,
Pretoria, South Africa

and
Susan Veldsman
Director
Scholarly Publishing Programme
Academy of Science of South Africa
Pretoria, South Africa

Abstract

More and more – both in the world of business and research – data is referred to as becoming the new oil. Artificial Intelligence – informed by data (incl. Big Data) and data instruments - is widely used to inform decisions, resolve problems, and predict trends. Social media such as facebook and Twitter are built around data only, and are billion dollar industries. Scientists internationally generate huge quantities of data on a daily basis, so that in turn it can be used to address challenges faced, including the challenges referred to in the 2030 Agenda for Sustainable Development. When data is FAIR – findable, accessible, interoperable, and reliable – it can be re-used, accelerating innovation and growth towards sustainable solutions. This paper will focus on the role of research librarians in making sure that data can be used for the unforeseeable future. The roles of the different role players in libraries will be addressed, as well as the knowledge, skills and services required to remain competent and relevant in an increasingly data driven world.

Keywords: *open science, open data, data repositories, research data management*

Introduction

In an increasingly data-driven world, a number of key stakeholders – including librarians – need to align and understand how they can contribute towards achieving the UN sustainable development goals. It cannot simply be business as usual, and digital technology developing faster than ever requires librarians to be fully digital competent, with the ability to use a wide spectrum of tools with great ease –also as far as data concerns, for example to analyse data, clean data, and visualise data. Librarians always had the role of making sure citizens and researchers have access to much needed quality information to advance research, and it is no different with data – another information source that can be utilised by researchers. We are on a daily basis confronted with fake news, fake information, and also – more and more in future – might be fake data. The data underlying all forms of research output has to be openly accessible so that it can be re-used, and the outcomes of studies be verified where in question.

As custodians of research in research intensive institutions, librarians need to embrace the opportunity to remain relevant, contributing through the specialised skills they have, through:

- Distinguishing between good quality data managed in a responsible way, versus the opposite, and
- Managing data generated by researchers in a responsible and ethical way.

Other stakeholders in making sure that quality data remains open and accessible include:

- Governments (responsible for open science policies);
- Institutions (responsible for strategically adhering to policy);
- Researchers (collecting data in an ethical and trusted way so that it can be re-used);
- Statisticians (processing, analysing and visualising data);
- System engineers (to maintain a network and allow for data to be digitally transmitted), and
- Libraries (managing and organizing the data, and making sure it is digitally preserved for the unforeseeable future).

As far as the Open Access movement worldwide concerns, librarians have played a huge role in implementing institutional research repositories, archiving institutional research output such as theses, dissertations and copies of published research papers, for the unforeseeable future, making it openly accessible for all to benefit. In addition to repositories, advocating for publishing in open access scholarly journals have also received much attention, with some libraries offering extending this role to publishing their own journals using journal management systems.
In addition to the above, libraries can also play an extended role in data management, which will be addressed through this paper.

African Open Science Platform

The African Open Science Platform (AOSP) – an outcome of the international accord on Open Data in a Big Data World - now in its second year - is managed by the Academy of Science of South Africa (ASSAf) with input from the International Council for Science Regional Office for Africa (ICSU ROA) being hosted by ASSAf. It is funded through the SA National Research Foundation, and in collaboration with the International Council for Science (ICSU) Committee on Data for Science and Technology (CODATA).

The project aims to develop an open science and innovation dialogue platform in order to increase awareness, accessibility and visibility of African science and data, at the same time reflecting on progress made on the African continent in terms of the following areas:

- Open science/data policy and strategy;
- Open science/data information technology (IT) infrastructure;
- Capacity building/training to support open science/data; and
- Incentives for sharing science output and specifically the underlying data sets, in an open and transparent way.

As part of this project, the team has so far engaged with numerous stakeholders, presented numerous workshops, and upcoming is a National Dialogue on an Open Science policy with Ugandan high level key stakeholders. Policy is often seen as a barrier, but it is much needed to understand how a country manages and protects its data from being exploited, for example where researchers would come and conduct research, leave the country, and then the data – of which the nationals and its very assets were the objects – never benefit in the end, and the data cannot be used to achieve the challenges mentioned in the sustainable development goals.

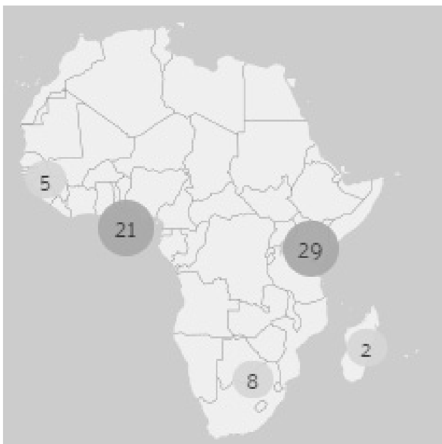
Importance of open research data

Research data is often referred to as the new "oil", with unlimited potential to inform and predict trends, develop new applications (apps), teach or learn machines (machine learning), and more. Africa itself has many great examples where data has changed lives, but more needs to be done for the data to be exploited to its full potential. To be fully exploited for all to benefit, data needs to be FAIR – findable, accessible, interoperable and re-usable. Librarians can play an important role in fulfilling the role of data stewards, managing copyright and licensing, assigning metadata, and preserving data for the long term through data repositories.

According to Gurin (2015) the primary purpose of open data initiatives worldwide is to help governments, businesses and civil society organizations utilize the already available digital data more effectively to drive sustainable development. Many Open Data initiatives involve taking data that is already publicly available and putting it into more usable formats, making it a powerful resource for private sector development, jobs creation, economic growth, and more effective governance and citizen engagement. Through the African Open Science Platform project we are trying to establish what exactly is happening on the continent in terms of African research data.

The African Open Data Impact Map provides a very conservative view, and many African data initiatives are not registered on this map. Through advocacy – also by librarians – researchers and institutions can play a much bigger role in creating an awareness for the importance to share data, the existence of the data to avoid duplication, and encourage all to register initiatives on platforms such as re3data.org, the Open Data Barometer and the Open Data Impact Map.

Figure 1. Open Data Impact Map - Africa



Benefits of open data

Open data benefits society in general, but to highlight a few:

- It helps predict trends and allow for informed decisions to be made;
- It drives development and improves the livelihoods of citizens of the country;
- More and more entrepreneurs are using data in innovative ways, creating more jobs which is much needed on our continent;
- It helps improve service delivery;
- It provides evidence for research conducted;

- Data potentially has far more outcomes when open, with a higher impact; and
- Only if research and data are open and democratized so that all can have equal access, it would be possible to work towards achieving the 2030 Sustainable Development Goals.

Fears researchers experience

Regardless of the benefits, researchers still often have their doubts, and are hesitant to share their data openly because of the following reasons, which is understandable. The African Open Science Platform hopes to come up with an incentives framework to guide governments, institutions, funders and more to how this issue should be dealt with. More and more funders make it a requirement that the underlying data to an article or research project/theses/dissertation be made openly accessible, e.g. NRF (South Africa) and Horizon 202 (European Commission).

Researchers are hesitant to share their data because they are afraid of:

- Getting scooped by other researchers;
- They feel they have invested resources and effort, and why should others have it "easy";
- Fear of someone else finding a path-breaking application of the data that the original researcher hasn't considered;
- Fear of problems/errors in the measurement process being exposed;
- Confidentiality/privacy of respondents might be a problem, although all proper and trusted research should be approved and subjected to ethics clearance; and
- Intellectual Property Rights are often signed away, with little understanding of copyright, licensing and intellectual property rights of the individual or organisation.

For all the above there are solutions, and the AOSP Incentives Framework – once published – will be addressing these.

Examples of data achieving the sustainable development goals

Great success has been achieved through making data openly accessible, and a few examples are shared below. It is important that these stories be collected, so that the impact can be monitored and researchers who are hesitant can be encouraged to make the right choice.

The struggle to eradicate malaria continues

Malaria remains to be a challenge, and is difficult to accurately measure because it shares symptoms with many other diseases. According to [this paper] there is however a way to accurately determining the quantity of malaria in any given area, providing valuable data to decision makers, researchers, funders and more. The study conducted had to rely on sources mostly hidden in old government archives or curated by the World Health Organisation. Most of the records were either poorly stored, burnt or were missing. In some countries like Kenya, Senegal, Tanzania, South Africa, Botswana, Namibia and Burkina Faso the surveys dated back 1950s. Conversely, recent surveys have been easier to locate through more modern web based searches.

To obtain village or school level data published in most journals or reports, scientists and government officials provided the raw data. This is a testament to a new era of data sharing where over 800 people have contributed finer resolution data.

The final report covers over 50,000 surveys dating back 115 years. This is the largest repository containing information on over 7.8 million blood tests for malaria. The study suggests that the prevalence of malaria infection in sub-Saharan Africa today is at the lowest point since 1900. But more needs to be done, and through making data openly available in a properly managed way, great progress can be made.

The Open Data Institute (ODI) published a report - *Supporting sustainable development with open data* - in which there are numerous examples of how data from Africa can contribute to achieving the sustainable development goals.

Protecting banana farmers' livelihoods in Uganda

Data was provided to the Uganda government on the banana bacterial wilt with real-time information on the spread of the disease. They were able to quickly identify the most affected areas and direct the limited treatments for the disease to prevent further advances. At the same time, they could disseminate information directly to the public via SMS on treatment options and how to protect their crops. Within five days of the first messages being sent out, 190,000 Ugandans had learned about the disease and knew how to save bananas on their farms.

A particularly beneficial use of this data would be to build a global subnational map of the prevalence of underweight children that could be used by governments and aid groups to target nutrition interventions to where they are needed most.
Other case studies from the ODI which is worth looking at, to demonstrate how data can benefit the people, include:

- Using maps to increase access to education in Kenya
- Monitoring child malnutrition in Uganda

Role of librarians

From the examples mentioned, it is clear that librarians – as data stewards – can position themselves strategically towards playing a role in achieving the SDGs through managing data. We hope that it receives prominence in institutional and library strategic plans, and that libraries in Africa are actively contributing to accomplish making valuable data openly valuable, managing copyright, licenses, file formats, metadata, migration to readable formats, call for proper citation of data, and more.
Burnett (2013) refers to ten recommendations – the result of numerous workshops - for libraries to get started with research data management:

1. Offer research data management support, including data management plans for grant applications, intellectual property rights advice and information materials. Assist faculty with data management plans and the integration of data management into the curriculum.
2. Engage in the development of metadata and data standards and provide metadata services for research data.
3. Create Data Librarian posts and develop professional staff skills for data librarianship.
4. Actively participate in institutional research data policy development, including resource plans. Encourage and adopt open data policies where appropriate in the research data life cycle.
5. Liaise and partner with researchers, research groups, data archives and data centers to foster an interoperable infrastructure for data access, discovery and data sharing.
6. Support the lifecycle for research data by providing services for storage, discovery and permanent access.
7. Promote research data citation by applying persistent identifiers to research data.
8. Provide an institutional Data Catalogue or Data Repository, depending on available infrastructure.
9. Get involved in subject specific data management practice.
10. Offer or mediate secure storage for dynamic and static research data in co-operation with institutional IT units and/or seek exploitation of appropriate cloud services.

From the above it is clear "why librarians have become natural partners in the research data management (RDM) process" (Burnett 2013). They have highly relevant information standards and organizational skills, including expertise in setting up file structures, knowledge of workflows and collection management, describing data in accordance with established metadata schemes and controlled vocabulary, collection curation/ preservation and service provision in the form of helpdesks, training, availability of subject specialists, etc.

Required skills librarians should have

It is crucial that library schools constantly adapt themselves, and train prospective librarians in the field of managing data. Existing librarians need to upskill themselves, learn from the literature and implementations by libraries worldwide, and attend courses (also free and online) in order to upskill themselves as part of Continuous Professional Development.

Both the *Author Carpentry* and *Library Carpentry* online workshops provide valuable direction as to the new skills to be acquired to better support researchers, which can be summarised as follows:

- Introduction to the terminology of data and computing, and the use of regular expressions to search and update text;
- Unix-style command line interface, allowing librarians to efficiently work with directories and files, and find and manipulate data;
- Cleaning and enhancing data in OpenRefine and spreadsheets;
- Introduction to the Git version control system and the GitHub collaboration tool;
- Relational database management system using SQLite;
- Web scraping and extracting data from websites;
- Using Python as a general purpose programming language that supports rapid development of scripts and applications;
- Scientific writing in useful, powerful, and open mark-up languages such as LaTeX, XML, and Markdown;
- Formulating and managing citation data, publication lists, and bibliographies in open formats such as BiBTeX, JSON, XML and using open source reference management tools such as JabRef and Zotero;
- Transforming metadata documenting research outputs into open plain text formats for easy reuse in research information systems in support of funder compliance mandates and institutional reporting;
- Establishing scholarly identity with ORCiD and managing reputation with ORCiD-enabled scholarly sharing platforms such as ScienceOpen;
- Crediting authorship, contributorship, and copyright ownership in collaborative research projects;
- Demonstrating best practices in attribution, acknowledgement, and citation, particularly for non-traditional research outputs (software, datasets);
- Identifying reputable Open Access publications and Open Institutional/Open Data repositories;
- Contributing to, and gaining value from, scholarly annotation and open peer review;
- Investigating and managing copyright status of a work, and evaluating conditions for Fair Use;

- o Open sharing of research using Creative Commons licenses, waivers, and public domain marks;
- o Provide data management services;
- o Provide sustainable and trusted data repositories where researchers can upload their raw datasets, and preserve for the unforeseeable future; and
- o Assign metadata and clean metadata.

The above not exhaustive, and to be continuously monitored.

Conclusion

Libraries – where data has not been embraced yet – can no longer afford to sit on the side-line and watch. They are important stakeholders in making sure the SDGs are accomplished, and should become data custodians and stewards. Existing practises need to be revisited and prioritised, clearly distinguishing between what researchers more and more can do for themselves, and where libraries can serve a bigger purpose in terms of data. To summarise in three points, the following are required from librarians:

- Upskill themselves and learn about the role they can play;
- Implement as part of the library strategy;
- Advocate for data to always remain open; and
- Make sure data is FAIR through data repositories.

If all stakeholders playing a role in the research and data lifecycle actively participate, we can all together achieve the sustainable development goals as far as data to providing solutions and predicting trends concern.

References

Author Carpentry. (n.d.). Available at: https://doi.org/10.7907/Z96H4FFZ . [Accessed on 6 Jan. 2018].

Burnett, P. (2013). *What is the role of a librarian in research data management?* Available at: http://blog.inasp.info/research-data-management-role-librarians/. [Accessed on 6 Jan. 2018].

Gurin, J. (2015). *How open data can drive sustainable development.* Available at: http://blogs.worldbank.org/ic4d/new-discussion-paper-how-open-data-can-drive-sustainable-development . [Accessed on 6 Jan. 2018].

Library Carpentry. (n.d.). Available at: https://librarycarpentry.github.io/ . [Accessed on 6 Jan. 2018].

Open Data in a Big Data World. (2015). Available at: http://www.science-international.org/sites/default/files/reports/open-data-in-big-data-world_long_en.pdf . [Accessed on 6 Jan. 2018].

Open Data Institute. (2015). *Supporting sustainable development with open data.* Available at: https://theodi.org/news/new-report-reveals-how-open-data-is-fuelling-problemsolving-in-the-developing-world-from-mapping-ebola-to-protecting-banana-crops . [Accessed on 6 Jan. 2018].

Snow, B. (2017). *What 115 years of data tells us about Africa's battle with malaria past and present.* In: The Conversation. Available at: https://theconversation.com/what-115-years-of-data-tells-us-about-africas-battle-with-malaria-past-and-present-85482 . [Accessed on 6 Jan. 2018].

Supporting sustainable development with open data. Available at: https://theodi.org/news/new-report-reveals-how-open-data-is-fuelling-problemsolving-in-the-developing-world-from-mapping-ebola-to-protecting-banana-crops . [Accessed on 6 Jan. 2018].

Transforming our world: the 2030 Agenda for Sustainable Development. (2015). Available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E. [Accessed on 6 Jan. 2018].

BROADENING LIS PARTNERSHIPS TO ACHIEVE THE SDGs

A PROPOSAL TO ESTABLISH THE LIBRARY AND INFORMATION EDUCATION NETWORK IN EASTERN, CENTRAL AND SOUTHERN AFRICA (LISENET-ECSA)

Isaac Kigongo-Bukenya
Visiting Professor
Uganda Christian University
Uganda

Abstract

This paper investigated the proceedings of the SCECSAL XIV Pre-Conference held 3rd - 4th July, 2004 at Niagara Hotel, Kampala. It was dedicated to resolve Guidelines to establish the Network of Library and Information Science – East, Central and Southern Africa (LISENET-ECSA). It was sponsored by the IFLA, Africa Section and INASP. The objectives of the paper were to: establish the Current Status of Consortia in the Context of SCECSAL Region, review/postmontem the recommendations of the Pre-conference on Establishing LISENET-ECSA, scrutunise the possible challenges to the materialisation of the recommendation of the Pre-conference and propose a Library and Information Education Network in East, Central and Southern Africa (LISENET-ECSA)

Methodology involved extensive literature review; content analysis of the Pre-conference Seminar proceedings; and interpretation of the input from the Online Focus Group Discussion with the selected participants of the Pre-Conference Seminar. Purposely selected respondents by the authors included members who were recommeded by the Pre-conference Seminar to form the Caretakeker Committee. Selected LIS educators who attended that Pre-Conference Seminar also gave their opinion. These two categories had wide experience in LIS Education. Findings established that the Caretaker Committee was frustrated because of lack of funding and could neither take action on the Pre-Conference Seminar recommendations nor have a Forum to report to for further action. The Conclusion was inescapable to produce this report at this regional forum so that future strategies to address this issue should be resolved.

Key Words: *LISENET-ECS A, Consortium, Network, SCECSAL*
Beneficiaries: *LIS professionals, LIS Managers/Administrators, and Library Associations.*

Background

Consortium and Network are sometimes interchangeably used. Consortium is an agreement, combination or group of companies formed to undertake an organisation beyond the resources of any one member. A network on the other hand is a group or system of interconnected people or things. A network has similarities as consortium in that its constituents are geared to achieve the same aim and objectives of undertaking/s. Both the consortium and Network agendas involve supporting each other with tools, resources, team building, training, knowledge management, and error management. The services and related matters engaged in by the Consortia in Library and Information Science Education Institutions (CLISEI) - University and other Tertiary Education Institutions, are greatly influenced by the LIS Education Institutions (LIS Schools, Departments or programmes). This relationship should be nurtured.The pressing current challenge is that NO Consortia related to LIS Education in the SCECSAL region exists. Extensive literature search reveals the Procedings of the SCECSAL XIV Pre-Conference tasked to examine the possibility of establishing the Library and Information Education Network - Eastern, Central and Southern Africa (LISENET-ECSA).

Aim

This paper critically reviews the SCECSAL XIV Pre-Conferenc e Seminar proceedings to derive guidelines towards establishing LISENET-ECSA.

Objectives

The objectives of the paper were to: review consortia in universities and research libraries in Eastern, Central and Southern Africa as background to the philosophy of consortium; review current status of consortia in LIS Education Institutions in the SCSAL Region; review/postmortem the recommendations of the Pre-conference; review the possible challenges to the achievement of the recommendations of that pre-conference seminar; and Propose a Network of Library and Information Education in East, Central and Southern Africa (LISENET-ECSA).

Methodology

The methodology included: extensive literature review; content analysis of the proceedings of the SCECSAL XIV Pre-Conference Seminar, Kampala; and interpretation of the input from the Online Focus Group Discussion of the selected participants of that Pre-Conference Seminar. This was mainly an exploratory review of the appropriate action/s to take in establishing LISENET-ECSA. It adopted mainly qualitative approach.

Current Status of Consortia in Universities and Research Libraries in the SCECSAL Region.

The SCECSAL region has many Universities and Research Libraries each struggling through sole efforts to achieve the best but constrained by inadequate well educated, trained and experienced human resources to achieve maximum excellence for sustainable development. Physical, human, financial, informational resouces are also duplicated. In a nutshell single institutional approach becomes too expensive; ultimately output gradually dwindles, or completely ceases. LIS education, is the corner stone of the provision of information professionals that manage library and informatin services, the blood for attaining the Sustainable Development Goals (SDGs), the UNESCO Agenda by 2030 could be jeopadized. Therefore steps should be taken to arrest the threat. Building a LIS Education Institutions Consotium could be the the answer.
Msuya (2014) is more emphatic on the advantage of consortium.

> "Library Consortium has many advantages, not only for developing countries, but also for developed countries. It brings related libraries together for a common goal; reduces prices for e-resources through common bargain; the amount to be paid by each (unit cost) is relatively small with shared subscription."

Datch (1999) observed that no library institution on its own, however rich, can purchase all resources it wants. In such circumstances sharing resources could be the only solution. He points out that:

> "There is no academic libray that can have the financial resurces to purchase all its needs let alone what is wanted. … consortium is therefore an attempt to rationalise the building and use of information resources collection through sharing and grooming more than ownership."

Although Datch's and Msuya's views targeted academic and research libraries, the same views are relevant to the LIS education institutions in the SCECSAL region today.

Selected Consotia in University Library Services/Higher Institutions of Learning in the SECSAL Region

Country	Consortium	Type
Kenya	Kenya Library and Information Consortium (KLISC)	All Libraries
South Africa	Gaunteng Environ Library Consortium (GAELIC) Cape Higher Education Consortium (CALICO), South African Research Information Consortium (SANRIC)	Higher Education, Research Libraries
Tanzania	Consortium of Tanzania University and Research Libraries (COTUL)	Univesity and Research Libraries
Uganda	Consortium of Uganda University Libraries (CUUL)	University Libraries

Source: Kigongo-Bukenya and Kaddu, 2017

The table above shows the Consortia efforts in Academic and Research Libraries in the SCECSAL region.

The Current Situation of Library and Information Education Network of Eastern, Central and Southern Africa (LISNET-ECSA) – A Proposal

Extensive literature review revealed that there was no "Consortium/Network" dedicated to LIS Education in the SCECSAL region. However, Library Consotia in traditional library and information services in Higher Education Institutions, were found estblished in the region See Table above. The affairs administered in Consortia of Academic Library Institutions (University and other Tertiary Education Institutions Library and Information Services) including establishing users needs, selection of information resources, processing these resouces, storage, retrieval and distribution for use and other related routines, are taught and trained by the LIS Education Institutions - LIS Schools, Departments or programmes - per se. Building these institutions to efficient and proactive levels means good foundation to the production of efficient information professionals and hence the services they manage .

The proposal below is the product of the review/postpontem of the recommendations made at the Pre-Conference Seminar to establish the Library and Information Science Education Network of Eastern, Central and Southern Africa Region (LISENET-ECSA) that took place 3rd - 4th July, 2004, Naigara Hotel in Kampala, Uganda. Content analysis of the above proceedings was the major methodology; suplemented/supported by the Online Focus Group discussion comprising of the selected participants of the Two Day Pre-Seminar.

Proposed LISNET-ECSA

Details of the LISNET-ECSA feature below:

1. Name

   The Library and Information Education Network of Eastern, Central and Southern Africa (LISENET-ECSA)

2. Vision

   Developing a Network of Library and Information Science Education responsive to curriculum development and research needs of the SCECSAL region.

3. Mission

Bring together Library and Information Science Educators in the SCECSAL region to promote research education and curriculum development.

4. Aims
   i. Enhancing the teaching, learning, research, publishing, and research capabilities of LIS education insitutions and multi lateral cooperative initiatives.
   ii. Exploring the collective expertise of LIS Educaters to provide an innovative response to to the challenges.
5. Objectives
   i. Establish a network of LIS Schools and Departments in the ECSA region
   ii. Create a forum for exchaning ideas about curriculum ideas for mitual assistance member and community service
   iii. Determine required change and incorporate them in LIS schools
   iv. Assess IT training and expertise needed
   v. Assess IT requirements for LIS schools to provide e-learning
   vi. Assess the possibilities of staff and student exchange programs
   vii. Consider joint reasearch production of materials and textbooks
   viii. Establish a database web page for LIS schools and departments
   ix. Encourage mutual recognition of curriculum to allow transfer of credits
   x. To enhance LISENET-ECSA income generating capacity
   xi. Membership of LISENET-ECSA

xii. Library Schools, department or faculties should hold membership to LISENET-ECSA. In addition, the 38+ ECSA Library and Information Schools should form the core membership.
xiii. Associate membership to be held by those institutions from other parts of ECSA region
xiv. Honorary membership from other parts of the region
xv. Observers to individuals inteessted in LIS Education but should have no voting rights

6. Structure
   i. Rotating Secretariat
   ii. Meetings (Pre-conference) should coincide with SCECSAL- 2 years rotation
   iii. Library schools within a country should sort themselves out and select a representative to host the Secretariat

7. In Addition
   i. Heads of Library Schools/Departments should put in place a structure to manage the LISENET-ECSA
   ii. Formulate operation guidelines for the Secretariat, LISENET-ECSA assisted by the respective library associations
   iii. Form an Interim Executive Committee
   iv. Activities
   v. Form Interim Committee
   vi. Develop Guidelines for the Secretariat
   vii. Harmonise discussions on developing LISENET - ECSA
   viii. Initiate publicity and advocacy
   ix. Mobilise resources and/or develop funding proposal
   x. Draft Constitution
   xi. Mobilissation for Membership
   xii. Develop Website/ListServe/Porto

8. Functions
   i. Curriculum development and harmonization
   ii. Monitoring of standards through exchange of examiners
   iii. Establishment of the centers of advaced studies and research
   iv. Exchange of lecturers and students
   v. Accreditation of qualifications

vi. Promotion of research through joint researvh specially in the fields such as Information for Development in Africa, and ICT applications.
vii. Joint publications, creating African texts, which will be more relevant, and the African referred journals disserminating information on researchers related to information field.
viii. Discussions and negotiations on creating centers of excellence
ix. Regional conferences, seminars and other professional gatherings.

9. Publicity

Target LIS Education members and other groups including, employers, students, supporters (fund raising agencies), Library Associations, government, including policy makers.

10. Publicity Strategies

i. Website
ii. List serves
iii. Paper documentation
iv. Journals or newsletters (e-journals, e-newsletters, etc).
v. Workshops/seminars
vi. Media adverts
vii. Sending representatives to bigger organs like IFLA, etc
viii. Collaboration with other groups/key players
ix. Working together with other professional associations e.g Argentina Library Association
x. Seeking for appropriate legislation affecting LIS

11. Funding

i. Membership fees – institutional and individual
ii. Income genereting activities e.g. workshops, seminars, short courses within countries or within the region
iii. Well-wishers – for donations depending on LIS marketing strategies
iv. Research proposals
v. Publications, etc

12. Sustainability

i. Distribution of responsibility

ii. Donor funded projects
iii. Management of funds
iv. Avoid political interference
v. Changing interest of ownership

Challenges

The challenges given below by the authors of this article are feared as possibilities that could negatively affect the achievement of the objectives of LISNET-ECSA. The fears were established from both literature review and the administered Focus Group discussions.

1. Reliabe Funding
   One of the challeges anticipated is lack of sustainable financial base to undertake planned activities. Major source of funding would be foreighn donors. Unfortunately this is dwindling; alternative sources should be fundraising.

2. Lack of Awareness
   Another challenge expressed was lack of awareness of the resources that are available. One librarian commented on the issue:
   E-resources awareness is a big challenge because of constant changes of faculty members and admission of new students every year, You have to keep on training new members every year.

3. Poor Institutions' participation
   The fear expressed again by the Focus Group was Government dwindling budgets to the Univesity and Tertiary Institutions Library Services hence no adequate capacity for paying subscriptions by the institutions.

4. Functional Secretariate
   Any successful Organisation should have a strong Secretariate to effectivelymanage the Organisation. Funding of the personnel and administrativecosts may not be possible anymore.

5. The Geographical distances amidst members This could makethe General meetings quite impossible. Some members might drop out.

6. Funding to launch the Network
   Following up the resolutions to implement the NETWORK continues to be a road block. Hence the Establishment Agenda of LISENET-ECSA has faced stalement.

Recommendations

The authors believe a strong case has been made for the establishment of the LISENET –ECSA. This idea has been on the discussion table much earlier than 3rd - 4th July, 2004, Hotel Naigara, when resolutions were originally made to establish and manage LISENET-ECSA. We can state that FUNDING is the mother of all challenges to the actualisation of LISENET –ECSA. Despite frantic efforts funding has been an insurmountable obstacle to host LISENET –ECSA and subsequent meetings. Holding the meeting as an attachment to SCECSAL would not assist out either because many LIS educators may not attend SCECSAL. The African Federation of Library and Information Association(AfLIA) - the continental body has taken strong support to Public Library Development in Africa - was at one point approached to support the establishment of LISENET-ECSA, BUT no positive action has been taken yet.
A very strong PLEA is made to AfLIA to take positive action to support the setting up of LISENET-ECSA. In the circumstances the formation of LISENET –ECSA is still remote. Indeed the que of problems is still long. The authors further recommend to set up a Working Committee comprising of the President, Secretary, Treaurer, IT Expert, and Member. The proposed terms of reference appear below:

Committee Terms of reference

1. Draft the Constitution
2. Propose rules and regulations to govern the NETWORK
3. Write and Market for funding the Project to Establising the NETWORK
4. Take any other action in establishing a fully fledged LISENET –ECSA

References

Buwule, R.S., 2014. Exploratory Study on the Drivers and Barriers to Adoption of an Integrated Library System in Kyambogo University Library Service. University of Pretoria.

Consortium of Uganda University Libraries, 2015. Consortium of Uganda University Libraries: About CUUL. Consortium of Uganda University Libraries webpage. Available at: http://www.cuul.or.ug/index.php/component/content/article?layout=edit&id=26 [Accessed July 3, 2016].

Creswell, J. W., 2003. Research design: Qualitative, quantitative, and mixed methods approaches 2nd ed., Thousand Oaks, CA: Sage Publications.

Code of Good Practice in the Provision of Transnational Education – Riga 6 June 2001. Bologna_Process/Code_TNE.asp#TopOfPage

Consortium of Uganda University Libraries(CUUL) http://www.cuul.or.ug/index.php?option=com_content&review=article&id=10&itemid=2 Accessed on 8th November 2012

Datch, C. (1999) "Academic Library Consortium in contemporary South Africa" Library Consortium management: An International Journal Vol. 1 No. 1 /2 pp.23-27

Kenya Library and Information Services Consortium. Available at: http://www.klisc.org Accessed on 2nd November 2012.

Kigongo-Bukenya, I.M.N. (2003). Towards a variable curriculum: A comparative study of curricula at the East African School of Library and the Departments of Library and Information Studies of Universities of Wales, Botswana, and Cape Town. Education for Information, 21(23): 113-144.

Libraries in South Africa: Associations, coalition and interest groups. Available at: http://www.goethe.de/ins/za/joh/wis/wtl/vka/enindex.htm Accessed on 9th November 2012

Kigongo-Bukenya, I.M.N and Kaddu, Sarah, 2017. A proposal to establish the Library and Information Education Network in Eastern, Central and Southern Africa (LISENET-ECSA), Table Paper presented at SCECSAL XX111, Entebbe Uganda

Msuya, J and Mungwabi, H, 2015, An appraisal of the Consortium of Tanzania University and Research Libraries.

Ocholla, D. N. (2000), Training for Library and Information Studies: a comparative overview of LIS education in Africa. Education for Information, 18: 35-52.

Ocholla, D. N. (2001), Curriculum response to a changing national and international information environment: theoretical and methodological paradigms on review and revision. Education for Information, 19:143-167.

Ocholla, D. N. (2003), An overview of Information and Communication Technologies (ICT's) in the LIS Schools of Eastern and Southern Africa: Education for Information 21(2-3): 181-194.

Ole Harbo, (1994). "Library and Information Science (LIS) Education in Europe. The role of EUCLID in curriculum Development and Equivalence of Qualifications." 60th IFLA General Conference- Conference Proceedings – August 21-27, http://www.ifla.org/IV?ifla60/60-haro.htm

Patel, H., Pettitt, M. & Wilson, J. R., 2012. Factors of collaborative working: A framework for a collaboration model. Applied Ergonomics, 43(1), pp.1–26. Available at: http://dx.doi.org/10.1016/j.apergo.2011.04.009.

Quality Assurance and Accreditation: A Glossary of Basic terms and Definitions (2004) http://ww.cepes.ro/publications/pdf/QA&A%20Glossary.pdf

Rosenberg, D. (2000). An overview of the education for librarianship in Anglophone sub-Saharan Africa. In wise, M. (Ed.), Education for Librarianship and Information Science in Africa. Denver International Academy Publishers: 11-23.

Schachaf, P. (2003), "National-wide Library Consortia Life Cycle" Libri, vol. 53

Shiholo, M. B &Ocholla, D. N. (2003). Changing trends in training needs for information professionals in Kenya. Library and Information Science Research Electronic Journal, 13(1): (Also available at http://libres.curtin.edu.au/libres13n1/index.htm) Accessed on04/05/03.

APPENDIX 1: Content Analysis Guide

Content Analysis was the strategy involving critical definition and explaination of the terms used in the study or research. It aimed at getting terms and contextualing them in line of the study.

Vision:the big picture/wish/aspirational features/characteristics, LISE-ECSA should take as guidelines. Words used included:

Mission: the ambition to strive to attain/achieve

Aim: The General achievement expected to be made by LISE-ECSA

Objectives: Strategies through which to achieve the aim of LISE-ECSA

Structure: Organisational/managerial structure of LISE-ECSA

Functions: managerial\admnlstrative activities of LISE-ECSA

Publicity: deliberate activities to promote LISE-ECSA

Publicity: Strategies – techniques to publicise LISE-ECSA

F**unding:** means of getting money for LISE-ECSA **activities**

Sustainability: ability to maintain the functionality of LISE-ECSA

Challeges: problems/frustrations that may affect LISE-ECSA

APPENDIX II: FOCUS GROUP DISCUSSION GUIDE

This FGD comprised an on-line discussion on the possibilities of establising LISE-ECSA. It comprised of the six people of different experience and expertise in LIS education at different levels. Three of these were professors of LIS Education; one LIS Educator at PhD level and well positioned in LIS professional association management activities. Both were involved in the founding Pre-Conference to consider setting up LISNE-ECSA hosted before SCECSAL X1V, Kampala Uganda.

Discussion involved the following questions:

1. What befell of the resolutions of the Pre-Conference to set up LISNET-ECSA, Niagara Hotel, in 2004?
2. Do you think that it is important to ressurect the issue?
3. What issue should the LISENET-ECSA consider as priority?
4. Which challenges do you envisage?
5. What strategies would you put forward for making LISE-ESCA a reality?

PARTNERSHIPS IN LIBRARY AND INFORMATION SCIENCE (LIS) TRAINING: THE CASE OF SWAZILAND NATIONAL LIBRARY SERVICE

Lungile Elizabeth Dlamini
Librarian
Swaziland College of Technology

Abstract

The aim of this study is to investigate the scholarship partnerships for Library and Information Science (LIS) training in the Swaziland National Library Service (SNLS), which is the highest posting body of library staff/ LIS professionals in the country. Previously, a number of this institution's LIS professionals benefited from the partnerships coordinated by the Swaziland government, through the Ministry of Public Service. The scholarship partners include: the British Council, American Embassy, Fulbright Scholarships, Australian Government, etc. and such partnerships made a great impact. This study sought to explore the role of the partnerships in LIS training of library staff; investigate the effects of lack of the partnerships in LIS training of SNLS library personnel; and to find out strategies that can be devised to restore and ensure continuous LIS training of SNLS library staff. The research method was predominately a qualitative approach to allow face to face interaction with participants and for statistical manipulation, a quantitative approach was used. Specifically, general direct observation, questionnaire, face-face, telephone and structured interviews were used for data collection. Findings show that most of the beneficiaries attained qualifications up to Masters Degrees in LIS and acquired skills and competences that made them good managers and leaders in the LIS profession. They are holding higher categories/ positions in this institution. It has been discovered that the majority of the SNLS library staff (49 out of 72) are practising librarianship with minimal qualifications such as Diploma in LIS and they all entered the profession without LIS training which compromises the LIS profession with regards to skills and competences. The study's participants recommended that LIS training be offered by the University of Swaziland for easy access and provision of part time LIS training. Moreover, change of recruitment system and employ trained library staff up to at least Diploma level is recommended. It has been observed that the MPS could not control the scarcity of the scholarship partners.

Keywords: *Partnerships, LIS Training, LIS Professionals, Library Staff, Swaziland National Library Service (SNLS)*

Introduction

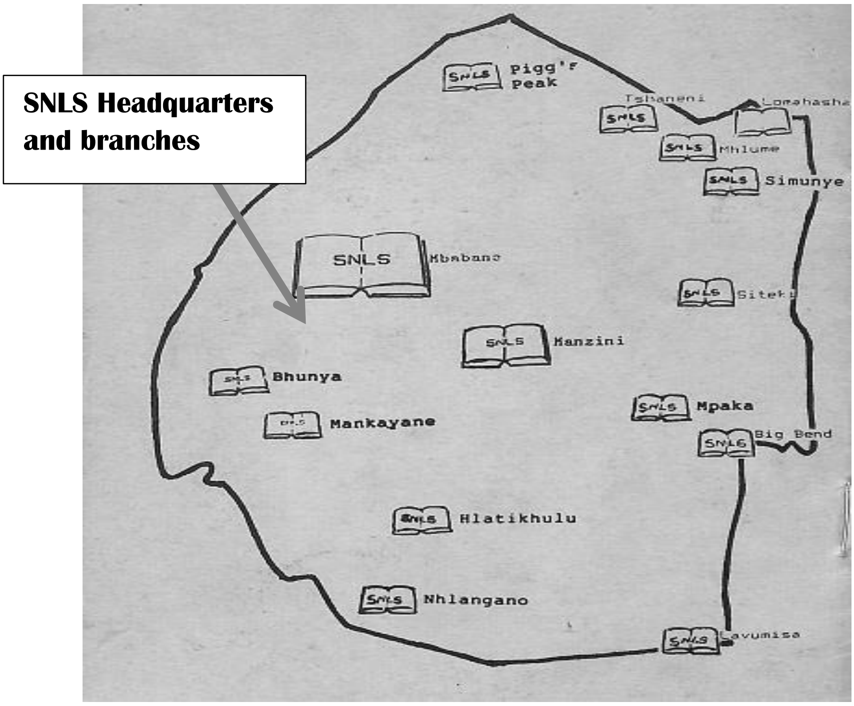
All professional fields require good training at various levels in order to produce skilled personnel. Library and Information Science (LIS) is a field that also require intensive training of staff in order to fulfil its mandate. According to (Yei,1996), LIS training of library staff/ LIS professionals is essential for purposes of empowering them to be developed professionals, ensuring that they deliver relevant services and preparing them to be skilled future leaders and managers in the LIS profession. IFLA mentioned that “the need for a well-trained staff is very important” (IFLA 2001, 66). In Swaziland, funding SNLS library staff/ LIS professionals to pursue LIS training was made possible through scholarship partnerships with several Government partners through the coordinating body, the Ministry of Public Service (MPS). However, currently the situation has changed and SNLS library staff/ LIS professionals no longer get enough support and scholarship partners to fund LIS training. As a result, the institution has a high number of un-qualified library staff.

Contextualization

What is SNLS?

SNLS stands for Swaziland National Library Service and it is a Department under Ministry of Information and Communications Technology (MICT) that is located in Mbabane, the capital city of the country, Swaziland. Although the institution was established in 1971, it is currently operating by the established Act of 2002 and governed by an Advisory Board which was appointed through Swaziland Legal Notice No. 129 of 2008. SNLS is the highest posting body of library staff/ LIS professionals in the country. It operates the National Library in Mbabane and the main Public Libraries that are located in Mbabane and Manzini as well as thirteen (13) branch libraries that are located in the small cities around the country, namely; Bhunya, Big Bend, Hlatikhulu, Lavumisa, Lomahasha, Mankayane, Mhlume, Mpaka, Nhlangano, Pigg’s Peak, Simunye, Siteki and Tshaneni. Moreover, above the responsibilities of traditional library functions and its mandate of being the United Nations Depository Library, the National Library Service has both a legal and bibliographic function in the administration of the (Legal Deposit Act, 2000).

Figure 1. ***Map of Swaziland showing SNLS Public branches***



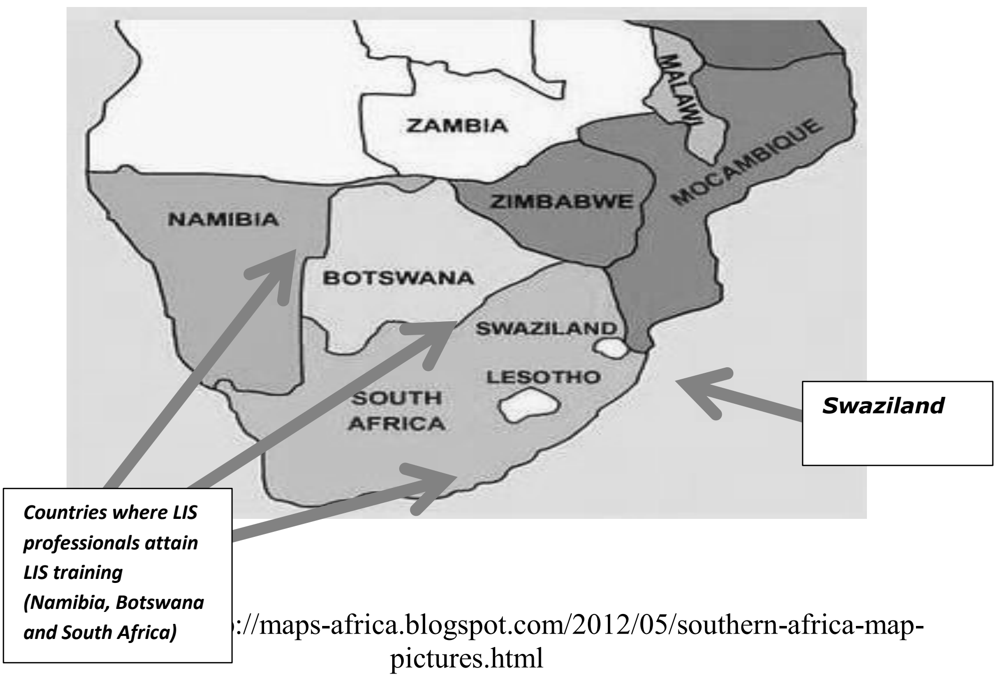
Source: *SNLS Brochure*

The norm with SNLS LIS training was that staffers are employed as school leavers, holding Form Five (5) Certificates or Matric and the MPS through the partners is responsible to train them. As (Ndlangamandla 2012, 1) indicated in her study that the general norm in Swaziland is that before the library staff goes for LIS training in a formal tertiary institution, they gain exposure in a library setting. This has happened in many libraries globally. According to (Hicks & Given, 2013; Rathbun-Grubb, 2016; Saunders, 2015), the study revealed that there is significant evidence that most professionals acquire management and leadership skills on the job or through practical applications, such as internships and as a result of this skill gap, many issues arise due to entering the profession without a solid foundation in management and leadership skills.

In an interview with a retired former Director of the SNLS, it was learned that when LIS profession was introduced in the country, employed library staffers would serve for at least two years in a paid internship programme. She mentioned that the partnerships coordinating body, the MPS was then responsible to search for an appropriate LIS School for those candidates who were due for LIS training. The next step would be that the candidates were informed to submit application forms to the LIS Schools and then candidates would go for the LIS training with funds covered by the MPS coordinated partners.

Over the years the partners made great impact in the Kingdom of Swaziland in attaining her goal to have trained public staffers in most ministries and departments. SNLS is one of the departments that benefited a lot from these partnerships. However, due to the increase of the library staff/ LIS professionals, the demand for LIS training could not be handled well anymore and they transferred the process of searching for LIS schools to SNLS and later to individuals. Candidates were then responsible to identify LIS schools of their choice mostly in the SADC region especially Botswana, Namibia and South Africa. This concur with the study by (Ndlangamandla, 2013) that there is still lot of dependence of studying outside Swaziland.

Figure 2 shows the Map of SADC Countries where Swaziland's library staff go for LIS training



://maps-africa.blogspot.com/2012/05/southern-africa-map-pictures.html

MPS Partnerships

Like most countries' governments globally, bilateral agreements are made and Swaziland Government through the MPS, the coordinating body of the scholarship partners is one of those countries who made agreements with regards to training of Swazi Citizens, whether public servants or private organisations staffers way back in the 1960s (MPS Training Policy). Hence, the existing partnerships with regards to LIS training of the SNLS library staff started since the establishment of the institution in 1971.

Problem and purpose of the study

For years the SNLS has been in partnerships for LIS training with several organizations that include British Council, German Embassy, Fulbright Scholarships, American Embassy and Australian Government, etc through the Swaziland Government's coordinating body, MPS. These partnerships benefited a number of LIS professionals in this institution. SNLS would submit a list of library staff/ LIS professionals who were due for LIS training to the MPS every year, for whatever the need of library staff or LIS training programme and then a country of choice because there is no tertiary institution offering LIS training in Swaziland (Ndlangamandla, 2013). In most cases the countries of choice would be in the SADC countries, depending on where the library staff wishes to go for study. For example, they would be due to pursue Certificates, Diploma, Degree or Masters Programmes in Botswana, South Africa, Namibia etc. However, some LIS professionals attained their LIS training in countries like Australia, United States of America, etc.

The SNLS LIS training was on rotational bases. For instance, some library staff would go for certificate programmes and some come back with diplomas qualifications and some would go for degree programmes and some come back with Masters Qualifications. That is how SNLS managed her LIS training and as a result the institution had strong competent LIS professionals.

Unfortunately, nowadays LIS training of the SNLS is faced with challenges. There are no longer frequent LIS training programmes the way it was in the past decades, and as a result the SNLS finds itself without fresh and qualified youthful personnel to man the institution's various activities.

In order to broadly explore the issue under discussion, the following objectives were formulated as a basis for the study:

a) To explore the role of partnerships in LIS training of library staff
b) To investigate the effects of lack of partnerships in LIS training of library staff
c) To find strategies that can be devised to restore and ensure continuous LIS training of library staff

Literature Review

The literature in this section of the paper shall be reviewed under separate headings guided by the objectives of the study. It is worth noting that the lack of literature covering the field of LIS is common. In a study by (Rahmatullaev, Ganieva & Khabibullaev, 2017) although there are a number of studies that address the issue of LIS training in other developing countries, a preliminary review of existing literature in English confirmed that there is a lack of scholarship that fully pertains to LIS education in Uzbekistan, which is the same situation in Swaziland. However, the main concern that triggered the initiation of this study is the observation of the trend of retiring SNLS LIS professionals.

Role of partnerships in training library staff

Importance of LIS training

It is vital that library staff goes through LIS training. According to (Ard et al., 2006) a trained library staff is technological developed in the field of information creation and dissemination, which includes the increasing use of computers, microforms, word processing equipment, and the use of lasers and a wide range of developments in the field of communications, including satellites. This technological change greatly indicates that there is need for continuous LIS training.

In a study by (Chaudhary, 2001) cited in (Khan & Rafiq, 2013), the authors adds that it is important for library staff to realise "the rapid growth of new knowledge; social needs of highly educated population; introduction of new technology in libraries; outreach programs to attract new groups of library users; and changing trends in library services". This brings the need for training of library personnel. According to (Ard et al., 2006) when the people working in the library are well trained, they create the level of morale and the calibre of service. This kind of attitudes determine whether the library will be developed, dynamic or static, user or inward focused in other words, whether the library will be an information powerhouse or a dreary warehouse. LIS training contributes to library staffers attitudes. This indicates that without training the mandate of libraries cannot be successfully realised.

Skills and competences of library staff

Once library staff/ LIS professionals receive LIS training, they are also expected to acquire variety of management and leadership skills and competences. According to Khan and (2013, p.1) "Training is being widely considered a key tool for enhancing job-related skills and performances. In the research by (Singh & Vorbach 2017, 95) "LIS professionals believe that strong leadership and management skills are incredibly essential" as cited by (Dewey, 2012; Le, 2014; Winston & Hazlin, 2003). According to ALA (2009), in the study by (Singh & Vorbach 2017, 95), it is stated that the required important "competences include planning, budgeting, managing teams and personnel, assessment of library services, networking, and transformational leadership".

Need for partnerships

Training is a necessity. Most developing countries like Swaziland, cannot afford to send personnel abroad for training in the various fields of library work. This shows the need for partnership since due to budgetary constraints most countries hardly prioritise on training of personnel working in libraries.

Therefore, partnerships in LIS training have played a big role in a number of countries. In Nigeria a study by (Okojie & Omotoso, 2013) indicated that the Librarians' Registration Council of Nigeria (LRCN) had to put necessary strategies in place to harness the potentials in education and training of librarians to achieve quality information service delivery for national development. They further argued that the Librarians' Registration Council of Nigeria (LRCN) had to carry out some of its professional regulatory functions and training of information professionals to deliver quality information services through collaborative effort and by fostering enduring local and international partnership.

Effects of lack of scholarship partnerships in training of the library staff

Retiring LIS professionals

In a study by (Ard et al., 2010), it was revealed that in 2009 over 25 per cent of librarians would have reach or passed the age of 65, and nearly two out of three current librarians will retire by this year, 2017. As a result, the LIS profession especially in the developing countries faces a number of challenges that include lack of LIS training funding or scholarship partners to assist and fund new library staff that will take forth the profession after the old ones have retired.

Lack of financial support

In India, (Johnson, 2007) as cited in (Khan & Bhatti, 2012) mentioned that LIS training in developing countries continue to suffer from lack of financial support by government. Moreover, (Khan & Bhatti, 2012) also cited in a study carried out in India by (Ali & Bakshi, n.d) stated that the LIS profession is faced with many challenges such as lack of finance, inadequate infrastructure, lack of knowledge and training, etc. In a study by (Khan & Bhatti, 2012) he further cited Pakistan conducted studies that do not show the healthy picture of LIS profession and among them was a study by (Asghar, 1992) that listed some of the main challenges of the LIS profession which include lack of opportunities for proper LIS training, availability and access to information sources, financial assistance and sponsorship, etc.

Strategies that can be devised to restore and ensure continuous training of library staff

Suitable options for LIS training

According to (Tella & Issa, 2012) the University of Zambia Library employed a number of strategies to foster and develop leadership among its library staff which included mentoring of library staff, training workshops, short and long term training, full time and distance learning. The option that was normally suitable for the University of Zambia library staff was evening programme.
2.3.2 Creation of both local and international partnerships

In Uganda, due to the LIS challenges, a study by (Okello-Obura & Kigongo-Bukenya, 2011) suggested creation of both local and international partnerships that can promote teaching, research, and innovations in the field of LIS.

In an attempt to address some of the challenges caused by lack of partnerships in LIS training, a study in Pakistan was carried out by (Khan & Rafiq, 2013) and it revealed a list of few local organizations that were making a difference in LIS training and that included "Pakistan Library Association, National Centre for Rural Development, Pakistan Library Automation Group, Pakistan Academy for Rural Development, Pakistan Library Club, Pakistan Scientific and Technological Information Centre etc".

Methodology

The study was carried out in Swaziland, Mbabane between January and April 2017.

A mixed approach research method was adopted. However, it was predominately using a qualitative approach to allow close interaction with participants and for statistical manipulation during the course of the study, the quantitative approach was used.

Data collection methods
The author's general direct observation, SNLS and MPS structured interviews conducted face-face, and through the telephone, former SNLS Director face to face interview and SNLS staff questionnaire were the data collection methods used on selected respondents.

Observation
Since the author worked for SNLS for more than 20 years, she observed the situation of SNLS with regards to LIS training.

Structured interview
The structured interview that was designed for the SNLS Management was aimed at eliciting information on the following regarding some of the following areas: qualifications of the personnel, number of those who benefited from the scholarship partnership, and policy issues regarding recruitment and promotion, challenges in soliciting funds for staff training either through government or partnership and strategies that are in place to ensure continuous training of staff.
The structured interview was also directed to the Under Secretary at the Ministry of Public Service and the aim was to get information on the following:

- Library and Information Science (LIS) training partnerships;
- establish if MPS has a policy in place regarding LIS training of Swaziland National Library Service (SNLS) library staff;
- find out if the LIS training of library staff is recognised the same as the other professionals;
- the challenges that the MPS encounter with partners regarding LIS training of library staff;

Structured questionnaire
Ten (10) copies of the questionnaire were emailed and sixteen (16) were hand delivered to SNLS library staff and LIS professionals participants, which means a total of 26 copies of questionnaire were issued. However, only 21 of them were returned. The study population consisted of seventy two (72) SNLS library staff including LIS professionals and eight (8) former LIS professionals who were holding senior positions and have the background and benefited from SNLS LIS training partnerships because one (1) was deployed to another field. Therefore, purposive sampling was used for the study. Three (3) retired and long served Librarians (all more than 35 years with SNLS service) who were at Senior Management positions formed part of the study participants.
The SNLS library staff structured questionnaire comprised of twenty (20) questions that was designed to solicit personal information as well as job related information such as qualifications, job positions holding and training.

Findings and Discussion

Below are the findings and the discussion of key issues that emanated from the study, and they are discussed according to the key themes, which are; the role of scholarship partnerships in LIS training of library staff; the effects of lack of scholarship partnerships in LIS training of library staff; and strategies that can be devised to restore and ensure continuous LIS training of library staff.

Role of scholarship partnerships in LIS training of the SNLS staff

Importance of LIS training

For every institution to be relevant, it needs to continuously train it personnel. The library staff participants were asked if they did receive any training after they were employed by SNLS and where institutions are located. A total participants of 70% indicated that they did receive training and 10% of studied in Botswana, 10% studied in South Africa, 5% studied in Namibia and 45% studied in local unaccredited institutions. Although among the 45% some did from one week to three months short courses, it is important that they received training in LIS training. Unfortunately, 30% said they did not receive any training and they need motivation to study at least short courses.

Skills and competences of the library staff

To find out the skills and competences acquired through LIS training as well as beneficiaries of the scholarship partnerships of the library staff, the SNLS management participant was asked to provide the library staff categories, positions holding, indicate if they are beneficiaries, qualifying for the positions and name the qualifications they are holding. To confirm the fact that the partnerships role is quite significant, the findings show that the beneficiaries sixteen (16) holds highest categories/positions' from Assistant Librarian to Director and highest qualifications from Degree in LIS to Masters in LIS in this institution. They could not have attained that without the partners' support in LIS training. The qualifications made them to be empowered with skills and competences for management and leadership positions. **Table 1** below illustrates these.

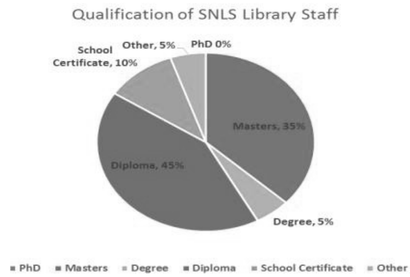
Table 1 Categories, beneficiaries of scholarship partnerships and obtained qualifications

Director	1	Yes	Yes	Must be LIS Masters with 5 + years experience	Masters in Library and information Science
Senior Librarian	1	Yes	Yes	Must be LIS Masters with 5 + years experience	Masters in Library and Information Science
Librarian	5	Yes	2 Yes and 3	Must be LIS Masters with 5 +	Masters in Library and

			No	years experience	Information Science and Bachelor of Library and Information Science
Assistant librarian	16	Yes	9 Yes and 7 No	Must be Bachelor Holder from recognised institution	Bachelor of Library and Information Science and Diploma in Library and Information Science
Senior Library Assistant	16	Not all	6 Yes and 10 No	Must be Diploma holder with 2 + experience	LIS Diploma
Library Assistant	22	No	No	Must be Diploma holder from recognised institution	None
Junior Library Assistants	11	No	No	Must be certificate holder from recognised institution	None

The study sought to explore the SNLS library staff/ LIS professional qualifications in order to find out the institution's library staff available skills and competences. The library staff participants were requested to indicate their qualifications. Findings in Pie chart 1 below show that none (0%) has yet attained a PhD level in Library and Information Science. It means that the SNLS LIS professionals have not yet achieved the highest level of librarianship qualification and short of those skills and competences acquired at that level. Participants holding Masters in LIS are 35% which means the MPS partners has empowered LIS professionals up to this level. Participants with Degree in LIS are 5% and it is one of the qualifications that have few LIS professionals which indicate the challenge of LIS training. The qualification with more participants is the Diploma in LIS with 45%. However, the majority of them are the product of local institution which eventually stopped training LIS staff due to issues of accreditation. School certificate holders are 10% of SNLS participants which means these are unqualified library staff. Other qualifications (mainly in irrelevant fields) are 5%.

Table 1 Categories, beneficiaries of scholarship partnerships and obtained qualifications



Pie chart 1 shows qualifications of SNLS library staff

To find out if the library staff participants gained skills and competences on the job with the support of MPS partners, they were asked to how they received their qualification and options were to indicate as follows: Benefited from MPS partnerships; Employed already qualified; Studied through distance learning in South Africa; Studied with local institutions; Any other qualifications and Not studied at all. Finding show that 48% participants benefited from the MPS partners which means the partnerships played a big role. None in this institution employed qualified in LIS which concur with the study by (Ndlangamandla, 2013) that library staff in Swaziland gain experience on the job and attain formal tertiary education later.

The study shows that 16% of the participants studied through distance learning with University of South Africa which means that some of the library staff members have the interest to get LIS training and develop themselves in order gain skills and competences. In a study by (Tella & Issa, 2012) the University of Zambia employees had to go for part time programs in order to get their LIS training which might eventually happen with SNLS library staff. It is unfortunate that 16% of the participants studied with unaccredited institutions; however, they did get exposure to librarianship. At least 10% do have exposure in training although it is not LIS training. The study shows that 10% of the participants have not studied at all which really compromises the LIS profession and result to incompetent library staff.

Table 2 shows how SNLS library staff achieved their qualifications

Benefited from MPS partnerships	48%
Employed already qualified	0%
Studied through distance learning with University of South Africa	16%
Studied with local institutions	16%
Other (not related qualification)	10%
Not studied	10%

Need for partnerships

Although the benefits of partners in LIS training look positive and the library staff needs LIS training, it is with concern that a number of SNLS staff and management no longer benefit from the scholarship partnerships since the partners are now scarce. According to the SNLS Management participant, a recently revised SNLS training plan shows that about 95% of the library staff members are in a queue, waiting to be offered scholarships or go for Diplomas and Bachelors in LIS training. This is crisis because funds are not available. To find out if the participants recognize the Swaziland Library and Information Association (SWALA) in terms of offering LIS training, they were asked how this body could help. Some indicated that there are people who are not doing their job in their positions because this organisation has been existing in the industry for so many years. In study in Nigeria, the Librarians' Registration Council of Nigeria (LRCN) similar to SWALA had to carry out some of its professional regulatory functions and training of information professionals to deliver quality information services through collaborative effort and by fostering enduring local and international partnership.

Scholarship partnerships go a long way in maintaining trained library staff. When responding to the question about when the partnerships were established, the MPS participant mentioned that many Swazi Citizens from various fields had benefited from a number of the scholarship partnerships coordinated by MPS since way back in the 1960s.

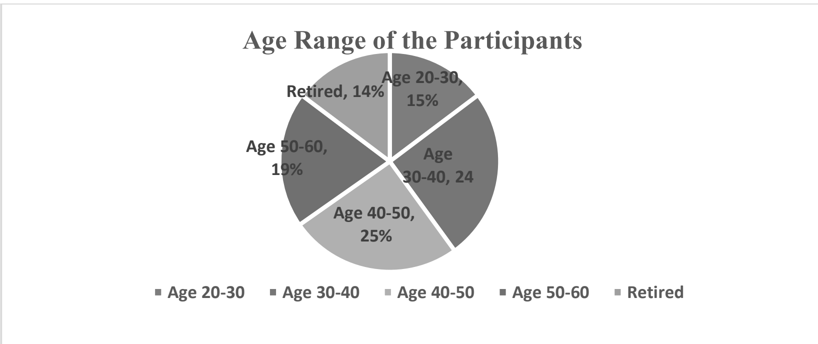
Effects of lack of partnerships in LIS training of library staff

The lack of scholarship partnerships in LIS training of the library staff is a cause of concern. It brings along a number of shortfalls for the entire existence and operations of the library service in Swaziland. Key concerns that arise as a result of the lack of partnership are discussed below.

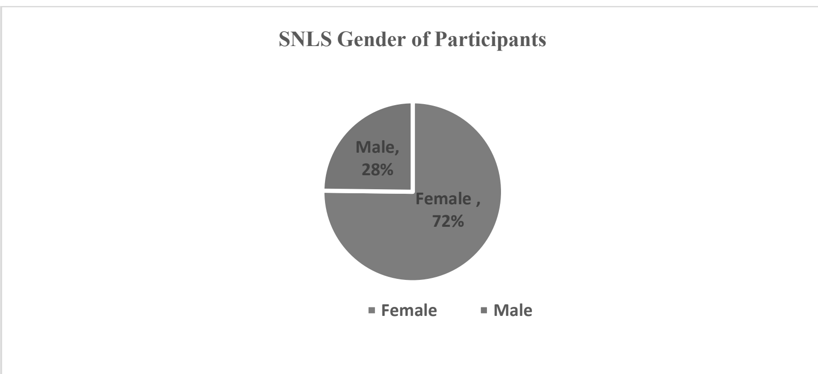
Demographic details of respondents

The study sought to find out the ages and gender of the participants in order to find out if all genders are well represented in this institution. According to (Australian Library and Information Association, 2014) the issue of gender and age need to be addressed. Actually, there is usually a lack of males and young people in the LIS profession. **Pie chart 1 and Pie chart 2** below show the age and gender of participants of this study. The age and gender information resonates with a study conducted by the Australian Library and Information Association's study. Again, the youngest participants between the ages of 20-30 are 15% which means there is lack of young people in this institution who will take forth the LIS profession. Males in this study there were 28% and females were 72% of the total participants. This becomes evident that this profession is more dominated by females.

Pie chart 1: Age ranges of the Participants



Pie chart 2: Gender of SNLS participants



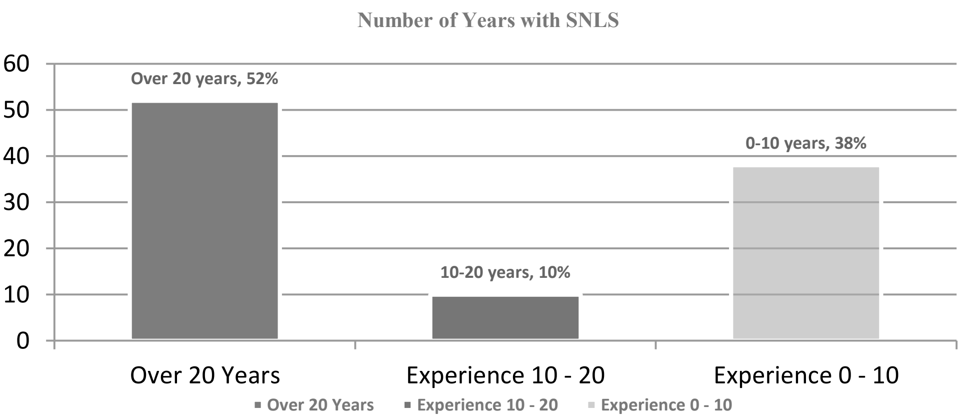
Retiring LIS professionals/ beneficiaries of partnerships

The beneficiaries of the partnerships should have served in the SNLS between 10-20 years and over 20 years. To find out if the participants were still going to serve in this institution or about to retire, they were asked as to when they joined the SNLS and options ranged between 0-10 years; 10-20 years and over 20 years. The study shows that participants with experience below 10 years of experience were 38% which is a big number and a challenge because this means that these are quite fresh library staff that are affected by the lack of partnerships in LIS training.

The participants that have served between 10 – 20 years in this institution were 10%. Although it is not a big number, these are library staff that not going to benefit from the scholarship partnerships because they might be affected by age limit. When the SNLS participant was asked the challenges that the institution has encountered regarding the LIS training of library staff in the past 2 decades, she mentioned the lack of scholarship for undergraduate studies due to stopped in-service training and the challenge for postgraduate officers that usually do not qualify due to age limit to scholarship legitimacy.

It further transpired that 52% have work experience of over 20 years. In the below **Bar chart** 1, the findings, therefore, indicate that most of the competent and experienced LIS professionals were almost at the exit door, meaning they are about to retire. This is a cause of concern because these are the beneficiaries of the scholarship partnerships. **Bar chart 1: Number of Years with SNLS**

Compromising the LIS profession



It has been observed that mostly, the library staff joining SNLS gets promoted to various categories/ positions some after attaining qualifications, and others

without LIS qualifications which really compromises the LIS profession because untrained personnel is incompetent.
According to the SNLS participant, the norm was that the institution would motivate its library staff by promotions after receiving qualifications. Further, the study found that the SNLS promoted library staff, revealed that all the participants have experienced promotions, even those who were less than 10 years with SNLS yet they did not even go for LIS training.

Lack of financial support

The situation of SNLS of lack of financial support resulted in the participants' various views include that: the system of SNLS LIS training as not transparent; not been reviewed; very slow; should allow many people to train at once to avoid the long queue; poor with no training plan; challenge is the funding; bad and the best way is to leave the institution. These comments show that most participants (staff members of the SNLS) do not have an idea of what is going on with regard to the LIS training of SNLS. Moreover, the age limitations deprive some library staff/ LIS professionals opportunities to get LIS training opportunities.

Furthermore, when the MPS participant was asked to indicate challenges of the LIS training in the past two decades with regards to scholarships from partners, he noted challenges that include issues of reduced budget for candidates who were supposed to be awarded scholarships from the partners. He made an example that partners would previously provide ten scholarships but this number was later reduced to about five (5) which is unfortunate situation because partners decide anytime and anyhow to withdraw their scholarships budgets. It also transpired that some of these scholarship partners decided to stop awarding scholarships and focused on other government projects which unfortunately impacted negatively to the LIS training of library staff/ LIS professionals.

Lack of LIS training institutions

On the question regarding challenges of the LIS training, most participants mentioned that the challenges regarding LIS training include the lack of training institutions in the country which means that even those who may want to study part-time find it difficult. At least in Uganda the training schools are not adequate, but the country has them. In a study by (Okello-Obura & Kigongo-Bukenya, 2011) it was stated that "the challenges facing LIS education and training are many. Some of these include the lack of adequate education and training schools. She added that going out of the country for LIS training is costly.

Strategies that can be devised to restore and ensure continuous training of library staff

Suitable options for LIS training

Recruitment system in an institution goes a long way. It is important for institutions to consider best recruitment system. Ard et.al., (2006) noted that it is the responsibility of administrators and managers to accordingly make job searches one of the top priorities in their organizations. They should recognize the importance of the hiring process to their particular library.

The SNLS participant stated that it was high time for SNLS to consider what LIS profession mean and change her recruitment system which will mean employ at least diploma LIS holders in order to avoid the situation that is compromising the LIS profession.

When the library staff participants responded on the question of options and strategies regarding SNLS LIS training, despite the fact that all of them were employed without qualification, the highest percentage of 71% suggested that SNLS revise her recruitment system and employ trained library staff, at least Diploma holders. Other participants, about 52% suggested that Collaboration with LIS training institutions for distance education and formation of partnerships with sponsoring institutions for full time LIS training. None suggested of change recruitment system, that is to say, none suggested the recruitment of Degree holders, and this is obviously because it is a higher requirement looking at the fact that very few an get hold of that.

Table 3 shows the options and strategies that SNLS can implement regards LIS training

Collaborate with LIS training institutions for distance education	52%
Form partnerships with sponsoring institutions for full time LIS training	52%
Change recruitment system and employ trained library staff up to at least Diploma level	71%
Change recruitment system and employ trained library staff up to at least Degree level	0%

Moreover, when the SNLS Management was asked what the institution had devised as some form of strategies or options regarding LIS training of its library staff, she mentioned that there was none. However, when asked if SNLS would consider options to eliminate LIS training challenges of library staff and enable the institution to have professionals or trained library staff. She agreed that to collaborate with LIS training institutions for distance education, form partnerships with sponsoring institutions for full time LIS training and change of the SNLS recruitment system and employ trained library staff up to at least Diploma level could be the best option.

Creation of both local and international LIS training partnerships

The MPS partners included international organisations such as the British Council, German Embassy, Fulbright Scholarships, American Embassy and Australian Government who came in handy to offer funding, scholarships to the LIS professionals. The lack of funds for LIS training is crippling the LIS profession and needs to be re-established.

Most library staff participants blamed SNLS and the Swaziland Library and Information Association (SWALA) for not making means that LIS training is offered in the country and searching for funders of the LIS profession locally.

LIS training policy

The best way for any institution to operate and achieving its goals is when there are good strategies in place. The same applies with SNLS. If this institution wishes to restore its LIS training, some strategies need to be devised which include having a good LIS training policy in place.

The study revealed that SNLS does not have a policy in place to assist in guiding the management in the LIS training. However, there is a training plan in place that is designed and it is discussed during training meetings which takes into account seniority, dates of appointment, qualifications and observed dedication of the library staff and that guides the SNLS management on who is due for LIS training.

However, the MPS participant mentioned that there is a policy in place that actually cuts across and covers all government ministries and departments including SNLS. However, it does not specifically cover the scholarship partnerships but it is for general training of the government ministries and departments' staffers; hence, it is not effectively helping to solve problems that engulf LIS training.

Encouragement for library staff to engage in distance learning

When the participants were asked if there were any devised form of strategies or options regarding LIS training of its library staff, it transpired that currently there is nothing in place because SNLS was relying on the MPS partners and was hoping that there will be some improvements in terms of providing more scholarship partnerships as it was a trend. Hence, SNLS encourages library staff to engage in distance learning especially with University of South Africa (UNISA), a recognised institution that provides part-time studies. It was noted that the University of Swaziland does not offer LIS training through its distance education and other local institutions which provided training in the area of LIS stopped due to issues of accreditation.

Collaborative partnerships with the University of Swaziland

The participants stated that SNLS is considering establishing collaborative partnership with the University of Swaziland so that it can introduce the LIS training programme locally which can definitely enable easier distance education, easy access and save costs for library staffers.

On the question as to which tertiary institution in the country can be recommended to offer LIS training, surprising all the 100% participants recommended University of Swaziland. This again concurred with the study by (Ndlangamandla & Ocholla, 2012) on her study for the feasibility to offer Library and Information higher education in Swaziland. Her study findings indicated that LIS profession employers expressed interest that LIS training be offered locally.

Revisiting scholarship partnerships strategy

According to SNLS management, the library staff may not all afford costs of LIS training, of which partnerships with sponsoring institutions for both full time and part-time LIS training can highly benefit SNLS library staff. She added that it would work well if MPS could revive the partners to continue with the scholarships because library staff cannot afford the costs of LIS training. This is in line with the study by (Okojie & Omotoso, 2013) that recommended that institutions should embark on environmental scanning and identify potential partners that could help identify efficient and effective management of scarce resources such as funding.

The study revealed that there is a need for MPS to revive the partners to continue with the scholarships because library staff cannot afford the costs of LIS training. Again, this concur with the study by (Okojie & Omotoso, 2013) who recommended that institutions should embark on environmental scanning and identify potential partners that could help identify efficient and effective management of scarce resources such as funding.

The participant from the concerned ministry also advised that LIS professionals could seek other means of getting LIS training such as distance education. Approaching local partners with regards to LIS training was under consideration.

The study revealed that most of the participants need LIS training. It is only those with Masters' qualifications that didn't show interest in training.

Conclusion and Recommendations

After successfully conducting the study, the following conclusions can be made:

- The institution has few beneficiaries from the MPS coordinated partnerships.
- The MPS seem to have no control on the challenge of the observed scarce scholarship partners.
- The University of Swaziland is suggested by all participants to offer LIS training in the country which can create better training opportunities especially part-time LIS training.
- The need for training is huge as almost half of the institution's staff members do not hold relevant qualifications and some are not qualified at all.

Based on the findings of the study, the following recommendations are made:

- SNLS needs to strategize with regards to LIS training and change her recruitment system in order retain relevant library staff/ LIS professionals and future competent leaders.
- SNLS must embrace change and develop new policies and adopt the LIS trends for the better future of the LIS profession.
- SNLS must again put strategies in place with regards to scholarship partners for instance, it should partner with the local private sector.
- LIS Professionals' standards and norms must be developed for quality service in the SNLS especially because the institution affiliates with International Federation of Library and Institution Association that sets LIS standards.
- SNLS must avoid compromising the standards for LIS profession and desist from promoting unqualified library staff to leadership positions.
- The Swaziland government should consider training the LIS professionals locally to reduce costs of LIS training.

References

Ard, A. et.al. (2006) 'Why Library and Information Science? The Results of a Career Survey of MLIS Students Along with Implications for Reference Librarians and Recruitment', *University Library Faculty Publications*, 17 April 2006, 45 (3) pp. 236-248. http://scholarworks.gsu.edu/univ_lib_facpub/27.

Australian Library and Information Association (2014) Future of the Library and Information Science Profession: Library and Information Professionals, Canberra ACT, Australian Library and Information Association, www.alia.org.au/futureoftheprofession.

IFLA (2001) International Federation of Library Association.

Khan, A. & Rafiq M. (2013) 'Designing effective in-service training for Librarians in Pakistan' *Library Philosophy and Practice (e-journal)* Libraries at University of Nebraska-Lincoln.

Khan, S. A. & Bhatti, Dr. R. (2012) 'A Review of Problems and Challenges of Library Professionals in Developing' *Library Philosophy and Practice* 2012.

LEI, Y. (1996) Training Library Staff to Adapt to the Internet Environment.

Ndlangamandla, K. C. & Ocholla, D. N. (2013) Library and Information Management higher education in Swaziland: a feasibility study.

Ndlangamandla, K. C. & Ocholla, D. N. (2012) 'Is It Feasible to Offer Library and Information Management Higher Education in Swaziland?' *Libri,* 62, pp. 363–376, DOI 10.1515/libri-2012-0028.

Okello-Obura, C. & Kigongo-Bukenya, I. M. N. (2011) 'Library and Information Science Education and Training in Uganda: Trends, Challenges, and the Way Forward' *Education Research International,* Article ID 705372, http://dx.doi.org/10.1155/2011/705372.

Okojie, V. (Dr.) & Omotoso, O. (2013) Education and training of information professionals: the collaborative role of the Librarians' Registration Council of Nigeria (LRCN).

Sharon, U. (2013) Partnerships and collaborations in public library communities: resources and solutions, The Australian Library Journal, 62 (2) 174-175, DOI: 10.1080/00049670.2013.790679.

Singh, R. & Vorbach, J. (2017) 'Re-envisioning Management Education and Training for Information Professionals' *J. of Education for Library and Information Science*, 58, (2)(Spring), Association for Library and Information Science Education. doi:10.12783/issn.2328-2967/58/2/4.

Tella, A. & Issa, A. O. (2012) Library and Information Science in developing countries: Contemporary Issues, IGI Global https://books.google.com/books?id=M-yeBQAAQBAJ&pg=PA5&lpg=PA5&dq=which+country+has+partnerships+in+library+and+information+science+training&source=bl&ots=eQjXFUzGsp&sig=FKT-upBi_ckBgZ8yMSptgNl9-AU&hl=en&sa=X&ved=0ahUKEwiB2emmzujWAhVrJ8AKHXjIBLYQ6AEIUTAF#v=onepage&q=which%20country%20has%20partnerships%20in%20library%20and%20information%20science%20training&f=false (accessed 11th October 2017).

AMERICAN CORNERS, A NEW SERVICE WITH A NEW TASTE IN UNIVERSITY LIBRARIES: HOW COMMUNITIES ARE BENEFITING FROM MZUZU UNIVERSITY AMERICAN CORNER

Allan J. Kanyundo
Technical Services Librarian and part-time Lecturer
Department of Library and Information Science
Mzuzu University

and
Gift Alfred B. Dube
Children's and Outreach Services Librarian and part-time lecturer
Department of Library and Information Science
Mzuzu University

Abstract

The purpose of this study was to establish how communities in Mzuzu are benefiting from Mzuzu American Corner. This was a survey study that adopted both qualitative and quantitative approaches. It attempted to answer three questions: what programs and services are offered at Mzuzu American Corner? What strategies does Mzuzu American Corner use to make its services unique? How are programs and services at Mzuzu American Corner benefitting the communities in Mzuzu? Quantitative data was analysed using Microsoft Excel while qualitative data was analysed by Microsoft Word by the use of narrative texts. A total of 40 participants were purposively and conveniently selected to participate in the study. Findings have revealed that Mzuzu American Corner offers programs and services in five main core program areas: English Language Learning; Education Advising; Information about USA; Cultural Programs and Alumni Involvement Activities. Users like American Corner programs because they are educative, entertaining and capture the interests of the users. American Corners are designed to be attractive, engaging and comfortable. Users of American Corners testify that they find Mzuzu American Corner safe, where they can socialize and make friends. They learn more about America and get trained in computer, Internet use and other technologies. Apart from these, American Corner allows its users use its room for their programs free of charge; they learn and practice English language and connect with opportunities. This paper recommends that libraries and information centres should consider designing programs and services that are engaging to its users and make them share their view or debate on topical issues affecting them.

Keywords: *American Corner; Library Service; Library Innovation; Library Program*

Conceptual setting

The term “American Corners” and “American Spaces” will be used interchangeably in this study. The term “American Spaces” refers to a collection American Corners, Information Resource Centres, Bi-national Centres and American Centres which are all programs designed by the US State Department to provide the people of the host country with a window into American culture and values(Fialho,2013). American Corners serve as regional resource centres for information and programs highlighting American culture, history, current events, and government (US Embassy Democratic Republic of Congo, n.d.).

The heart of an American Corner is its commitment to providing public diplomacy programs that engage various local audiences. American Spaces serve to build bridges of understanding, collaboration and partnership between host countries and the United States of America (American Spaces 2016). In this regard, American Corners world-wide conduct programs to achieve the aforementioned mission. For example American Centre in Yangon organizes programs that support building of the foundation for voter education and democratic practices. Programs include English language classes, civil society training and club activities (American Embassy in Burma, n.d.).

In Ethiopia, speakers visiting American Corners discuss U.S. global policies; exchange students share experiences from the United States. They also conduct Digital Video Conferences that cover sensitive issues like HIV/AIDS and human trafficking. (American Corner Ethiopia). American Spaces in South Africa offer Classes and form clubs introducing new technologies, 21st century digital skills, academic resources, films, discussions and lectures on entrepreneurship; leadership, climate change, international affairs, and others (US Consulate and Embassy in South Africa, n.d.).

American Corner Kitwe in Zambia is a centre where students are provided access to new technologies like use of e-readers that are loaded with fiction titles to support book clubs while desktop computers and laptops are provided for surfing the internet. The corner also introduced a dedicated Maker Space area with materials to conduct regular and on-going Maker Space activities. Users learn about basic circuitry, computer coding, and robotics, among other activities (US Embassy in Zambia, n.d.)

American Spaces in Taipei conduct extensive programs including student educational advising, lectures on American culture, book discussions, story-telling programs, poster shows, maker programs and others (American Institute in Taiwan, n.d.). To improve technology skills and chances of employability among the youth, students at the Lincoln Corner, in Kedah, Malaysia, learn to use a 3Doodler, a pen that creates 3-dimensional plastic objects. Using 3-D technology enables students to learn and understand concepts and build skills for sparking entrepreneurship interests and developing new products. American Space in Madrid among other programs hosts GirlsTech Camp, a three-month program that introduces middle school-aged girls to technology to motivate them to pursue careers in science and technology (American Spaces 2016).

More importantly American Corners help to serve disadvantaged communities. For example public schools whose students have little access to technology and resources visit Centro Cultural Sampedrano binational centre in Honduras to attend EducationUSA program that provides information about opportunities to attend college in the United States. This centre also provides the “Access Micro-scholarship” program that offers intensive English learning through after-school programs to students age 13-20 (US Embassy in Honduras, (n.d.); American Spaces, 2016). American Corners build future leaders for example one user at American Corner Batumi testified having been connected to American Colleges and Universities where he got admission and financial assistance to American university (US Embassy in Georgia, American Corner Batumi, n.d.). On the other hand, American Corner Bangui in the Central African Republic targets the youth to offer them trainings, events and information about the U.S. (American Spaces, 2016).

Theoretical Framework

The importance of ensuring that research is guided by theories cannot be over-emphasized. Lester (2005) postulates that theoretical frameworks offer guidelines to answer the why questions which do not have to be simply speculated by the researcher from the outcomes of the study. This study adopted the “Attraction Theory “proposed by Aroson in 1980, which postulates that one is attracted to others on the basis of: *physical appearance and personality*, *proximity* (liking others who are physically close to us), *similarity* (liking others who are like us), *familiarity* (liking those who have frequent contact with us), *reciprocity* (liking others who like us) and *barriers* (liking others we cannot have) (Shanthakumar and Xavier, 2001, p.27). According to this theory, if relations give us more rewards and pleasure than cost and pain, we will like those relations and wish them to continue. In this vein, library users (customers) are attracted to physical attractiveness of service, rewards that customers get from the services and pleasure that is associated with the service and closeness of service to individuals.

Contextual setting

Mzuzu University American Corner was officially opened by the Ambassador of the United States of America on 24 October 2005. The American Corner at

Mzuzu University primarily serves a community of about 4,500 students, 200 academic staff members and about 300 non-academic staff from Mzuzu University. In addition, the Corner also serves the surrounding communities of about 160, 000 people in the city of Mzuzu and other users from the Northern Region of Malawi. There is no other centre in the Northern Region of Malawi that can provide comprehensive information about the US and Education Advising Services to those aspiring to study in the US apart from Mzuzu University American Corner. (US Embassy in Malawi, n.d.).

The introduction of major service companies (such as Auction Holdings, Southern Bottlers, Mzuzu University, Mzuzu High Court, Department Stores, Mzuzu Central Hospital, Reserve Bank of Malawi) into the region is attracting more people into the city, hence need for more services. Therefore, the presence of American Corner in the city has brought more opportunities to the people of Mzuzu (US Embassy in Malawi Website). For example people are upgrading their qualifications, orienting themselves in the use of technologies and the establishment of book club at American Corner has encouraged building of reading and conversation skills, use of free online courses (Massive Open Online Courses -MOOCs), giving those with limited accessibility to education a chance to advance at very little expense to themselves. In addition, the Mzuzu University American Corner provides the general public with various services. The services offered include access to a wide range of print and electronic materials on USA, access to a public free Internet service, printing services, free Internet training, video shows, book discussions, workshops, meetings and exhibits. The centre is open to the general public. Mzuzu American Corner opens from Monday through Friday every day from 8.00 am to 4.30 pm. At first it used to open from 8.00am to 5.00 pm but since the Malawi Government changed official working hours, government institutions also followed suit. Therefore Mzuzu American Corner also changed its opening hours when Mzuzu University changed its official working hours (US Embassy in Malawi, n.d.).

Problem and Purpose of the Study

Introduction of American Corner at Mzuzu University Library and Learning Resources Centre in 2005 brought in new ways of information service delivery. Apart from the day to day provision of information access, American Corner at Mzuzu University provides topical programming services and sessions of technology training to its clientele. Unfortunately, no studies have been conducted to assess the service impact of American Corners in Malawi, specifically, the Mzuzu American Corner so that other information centres can learn from these experiences. This study was therefore conducted to reveal how the public is benefitting from the Mzuzu American Corner at Mzuzu University in Malawi. This study intended to determine how communities are benefitting from Mzuzu University American Corner programs and services in Mzuzu, Malawi.

Research Questions

This study attempted to answer the following questions:

- What programs and services are offered at Mzuzu American Corner?
- What strategies does Mzuzu American Corner use to make its services unique?
- How are programs and services at Mzuzu American Corner benefitting the communities in Mzuzu?

Literature Review

Not much has been published on American Corners world-wide in peer-reviewed journals, however most of the literature this study has used comes from the authoritative American Spaces sites the world over. These have included reports and information from websites of different American Corners.

Services and Programs offered at American Corners

American Corners are spaces that offer public programming while supporting five core or principal programs: English language learning, Educational advising, Alumni activities, Cultural programs, and Information about the US (US Embassy and Consulate in Nigeria, n.d.).American Corners are the best places to find information on how to study in the U.S., US Visa information, educative videos, facts and statistics about the U.S. In all American Corners, users have free and open access to fast and reliable Internet. Apart from Internet access, American Corners provide training on how to use their resources and other technologies (Smithsonian Global, 2016; American Corners Fact Sheet, 2013).

Smithsonian Global (2016) has pointed out those visitors especially young people learn about U.S. build job skills and participate in dialogue with each other and Americans in a safe and free environment. In American Spaces young people discuss different issues affecting their social, political, cultural and educational life including anti-corruption issues, elections, women empowerment and entrepreneurship for social economic development. It is not uncommon to find the youth discussing issues on human rights, English language learning, studying in the US of America, bilateral relationships, STEAM (Science, Technology, Engineering, Arts and Mathematics) and doing activities that foster critical thinking and problem solving. Users also discuss issues about environment, American Culture and values etc. (Office of American Spaces, 2016).

A study conducted by Chawinga and Ngwira (2015) found that American Corners act as centres where people learn and access technological services like Internet, photocopying, printing, scanning, computer trainings, watching DSTV etc. In the same vein Asia-Plus Media Group (2017) found that American Corners are places where people access computers, interact with cutting-edge technologies. Additionally, Chawinga and Ngwira (2015) discovered that American Corners also provide cheap and high quality Internet services for example; they found that Mzuzu American Corner provided unbeatable high speed and reliable Internet in the whole of Mzuzu City. The same study also found that Mzuzu American Corner offers quality photocopying services due to the fact that its photocopiers are always properly serviced.

US Embassy, Zambia (2005) asserts that American Corner programs include but not limited to exhibitions, conferences, seminars, workshops, English language discussions, speaker programs, education advising etchant categorized 2005 annual report of American Corner Podgorica shows that American Corners offer programs like lectures that are organized on topical subjects like human rights, protecting Intellectual Property, climate change, understanding race, economic development etc. through which Americans and the host country subject experts present and openly discuss with the local audience. Good examples of topical lecture series programs American Corner Podgorica offers include human rights; understanding U.S. Foreign Policy; Screenings of documentaries and feature films, book presentations, Special programs (commemorative programs) etc.

A Smithsonian Global (2016) point out that one of the most innovative programs in American Corners is the Entrepreneur Incubator. This program equips participants with experiences and skills that help them in starting new business or finding new jobs.

Strategies that make American Corner programs and services unique

Engaging and Interactive Programs

America Spaces offer dynamic and interesting programming activities created to attract, engage and interact with the target audiences in dialogue and relevant to U.S. foreign policy and the host country. For example American Corner Astana (2017) emphasizes that active programming is what makes American Corner unique. The regular scheduled programs like discussion programs, debates, music, reading clubs, watching movies, kid's hour, presentations and lectures dedicated to specific events make American Corners a class of its own contrary to traditional library services and programs. Some of these scheduled regular programs are the commemorative events like holiday themed events: Earth Day celebration, Human Rights Day, Halloween, among others. (Ovidius University, 2014).

Tactful Advocacy

Secondly, tactful advocacy is another technique that American Corners use in order to attract and maintain the curiosity of its users. For example, American

Corner offers space to the general public to use to conduct their functions (U.S. Embassy Namibia, 2017).Once they come, they are introduced to programs and services American Corner offers. They are again assured that American Corner is their space which they can utilize. This makes the audience excited and willing to come and attend American Corner programs as well as use it for their programs and activities.

Open access

Open access in another approach that helps American Corners to attract and maintain its audience. According to Vision of Modern American Space, (2017) free or open access into the American spaces without appointment or advance security access request makes it a choice for many people to go and use American Corners. American Spaces are open to everybody regardless of race, political, cultural, religious, gender and physical orientations. In other words, the facility is open to everybody (Chawinga and Ngwira, 2015).

Offering of Free Internet and use of Other Technologies

The offering of free Internet access in American Corners attracts people from all different walks of life to come and patronized its services. American Corners offer free Internet access, with the best bandwidth and fast WIFI. Technology in American Spaces is of high quality and allows visitors to connect virtually with counterparts in other American Spaces, the region/country, the US to communicate and collaborate globally. American Corners on the other hand have competent staff who teaches users how to use different technologies. Users are encouraged to bring in and use their devices to make activities participatory, social and multiplying the impact. (Vision of Modern American Spaces, 2017).

Marketing strategy

Marketing strategy of using Smithsonian resources like furniture and room design as a promotional strategy has proved to be effective in attracting the audience to American Spaces. According to Office of the American Spaces Annual Report (2015), Smithsonian programming materials are a good example of materials that demonstrate how content, as well as design resources, available through the partnership can increase the appeal of programs to the general public. They make the American Space look beautiful and attractive to the users.

Maintaining a database of users

American Corner maintains a database of users who come to use American Corner programs. This directory/database is composed of names of the patrons, their contact details and which programs they attended. The database helps the corner management to know which people are interested in what programs.

Therefore, whenever, a program is being organized, these are the primary target audience. American Corners believe in interactive engagement with its audience in its programs. This approach helps it capture the interests of the users, understand user behaviour, and maintain strong relations with its customers. This results in having regular members who are royal to its programs and activities. This is fundamental to the success of modern American spaces(American Spaces, 2017).

Outreach

American Corners have moved away from the notion of providing traditional library service model to be more dynamic, outreach-oriented, audience-focused, and distinctly American engagement platforms (American Spaces, 2017). American Corners do not wait for people to come and use their services but also goes to the people through outreach activities. This has been instrumental in attracting the audience to many programs and activities that are introduced to them during the outreach missions.

How communities benefit from American Corner Programs and services

American Corners serve a diverse background of users. Amongst them include decision-makers, opinion leaders, Journalists, academics, businessmen and women, civic organizations, teachers, students, government officials, military clergy and traditional rulers etc. (American Corners Fact Sheet 2013; LECIAD, n.d.). American Corners organize cultural events and activities, and also operate as a platform for joint programs.

Provision of Space/Room

American Corners/Spaces are centres where Americans meet with the host audience to discuss issues of mutual interest between American Embassy and the host institution. As such, American Corners offer meeting room/space available to host activities or programs (US Embassy Namibia, 2017). The same vein American Corner Belgrade in its service delivery provides associated reading, meeting and programming rooms that are made available to host program events and activities. These program activities are like workshops, speaker programs, film screenings, meetings and exhibits. (US Embassy, Ghana, n.d.; US Embassy Belgrade, 2017)

Lending Services

Any American Corner is a small cultural centre which works in a major library and provides a wide variety of information with the help of books and audio-visual resources etc. It is therefore not uncommon to find American Corner offering library services using its traditional and digital resources. For example American Corner Constanta in Romania functions as a regular library with loan and reference sections, so that the readers can either borrow books or consult them on the friendly premises in the new campus of Ovidius University (US Embassy Romania, 2014). It should however be pointed out that all American Corner programs and activities are open to the general public. In other words, they are open and free for all. This tends to close a gap of information need for the communities surrounding since most American Corners are established in universities, Non–Governmental Organizations, Schools etc. (American Spaces Handbook, 2016) where access is limited a specified categories of users.

Learning and Promotion of English Language

American Corners promote English language learning by offering specific activities that aim at learning and practicing the language. For example, the American Corner at Rwanda Library Services provides free English language learning program that is aimed at building confidence of English speakers, especially non-natives, as well as acquiring conversational skills (WorldDenver, 2015). In 2012, the US Envoy to Rwanda launched a unique annual program called "Everybody Reads Rwanda." This was a two-week program that aimed at promoting reading as an activity that can be shared by more than one person. In this reading program copies of the same book are circulated to students across the country, and schools host book discussions with help from the U.S. Embassy. In other countries, this program is achieved by "a Books Discussion Club"(WorldDenver, 2015). In American Corners, English teachers learn how they can present their lessons as well as communication abilities and English language competences in general (US Embassy in Romania, 2016).

American Spaces organize and conduct programs that are aimed at developing children's literacy skills. For example, American Corner Romania conducts children programs that contribute to development of children's early literacy skills and communication abilities (US Embassy in Romania, 2016). In American Corners, users improve their English proficiency through interactive activities and drills. For example American Corner in DRC, there are CD-ROMs that support several English learning interactive activities that are very much appreciated as they help improve American Corner's users' English levels (US Embassy Democratic Republic of Congo, 2017)

Learning about USA

According the US Advisory Commission on Public Diplomacy (2010), American Corners provide local populations with information about American culture and policies. The host institution and the general public access information from books, DVDs, magazines, computers and online databases on US culture, history, values etc. of the US. (US Embassy Namibia, 2017). On the other hand, people who patronize American Corners connect and learn about the US. At Cluj County American Corner in Romania citizens find answers to questions about the U.S. and issues of global concern such as human trafficking, climate change, economic welfare, and international security through speaker programs, both in person and via digital video conferences (US Embassy Romania (2017).

Connecting People to People

US Embassy in Serbia (2017) claims that there are over 400 American Corners around the world that provide friendly atmospheres where visitors can connect and learn about the US through print and electronic media such as books and magazines, Internet access, and engaging in-person and virtual programs. Most American Corners have Digital Video Conference capabilities, thus enabling embassies a rare opportunity of bringing American speakers to remote locations to facilitate interactions and sharing of ideas between American people and the host country citizens. (US Embassy Ethiopia, n.d.).Furthermore, American Corner Cluj County in Romania asserts that the American Corner Cluj is a space where local audience connect with American Citizen. Through their connections, they learn new skills about entrepreneurship (US Embassy in Romania, 2016).

Learning about Latest Technologies

Office of the American Spaces (2015) has pointed out in its annual report of 2016 that American Spaces are now moving beyond a focus on “mutual understanding” to become more dynamic and proactive platforms for convening discussion on issues relevant to U.S. foreign policy interests. To this end, they are employing the latest technology and focusing on user needs and mining programs that engages young Indonesians on issues of strategic importance. Cluj County American Corner Cluj-Napoca is a modern space is also a place where the young generation learn new skills or improve existing ones like how to use the latest technology (US Embassy in Romania, 2016). In the same vein, Asia-Plus Media Group (2017) observed that at American Corners, visitors access computers, interact with cutting-edge technologies.

Research Methodology

This was a survey study that utilized both quantitative and qualitative approaches. Quantitative data collected from users of the American Corner using a questionnaire that was analysed quantitatively using excel application software and presented in tables. Qualitative data was analysed by Microsoft Word using narrative texts. A total of 40 participants were purposively and conveniently selected. Purposive sampling was used to capture opinions of frequent users of the American Corner who the author thought are conversant with American Corner programs and services. Therefore, teachers from 6 schools were purposively selected to participate in the study. Four primary schools and two secondary schools were selected because of their frequency in attending programs at the American Corner. Thirty (30) questionnaires were handed over to the headmasters, five at each school. The headmaster distributed the questionnaires randomly and conveniently to any five teachers who were present on that day. The headmaster only gave the questionnaires to teachers who had ever escorted students to Mzuzu American Corner. Four (4) students Union leaders were also purposively selected and given questionnaires to respond to. Four (4) leaders of youth organizations who use the American Corner were also asked to respond to the questionnaire. Two (2)Library Managers from Mzuzu University Library and Learning Resources centre were interviewed. Results are presented below in the next section.

Data Presentation and Discussion of Findings

This section analyses, presents and discusses results emanating from data that were collected through questionnaires and interviews. A total of 40 questionnaires were distributed. A total of 36 questionnaires were returned. Four (4) were null and void because they were incomplete. Therefore, the total response rate was 85 percent from 34 questionnaires that were returned complete. The study attempted to answers the following questions:

- What programs and services are offered at Mzuzu American Corner?
- What strategies does Mzuzu American Corner use to make its services unique?
- How are programs and services at Mzuzu American Corner benefitting the communities in Mzuzu?

Programs and services are offered at Mzuzu American Corner

Library Managers were interviewed to highlight the main areas of programming at the Mzuzu American Corner and the following were their responses:

Respondent 1verbatim

> “ From what I know, Mzuzu American Corner organizes programs focusing on provision of information about America, helping students who are aspiring to study in the United States of America. It also holds commemorative holiday events like Black History Month, Earth Day, World Aids Day, Martin Luther King Jnr. birth day etc.”

Respondent 2verbatim

> “I have seen American Corner inviting people to its programs. I have attended some of the programs organized and they have included quiz contest (mathematics, English conversation, debates etc.). In some programs there are people who went to America speaking. I have also seen American Corner organizing public lectures on topical issues including panel discussions on climate change.”

These findings concur with what American Spaces (2017) and US Embassy and Consulate in Nigeria (n.d.) pointed out that in support of five core programs, American Corners provide English language learning, Educational advising, Alumni activities, Cultural programs, and Information about the US. In addition, US Embassy in Zambia (2005) asserts that American Corner programs include but not limited to exhibitions, conferences, seminars, workshops, English language discussions, speaker programs, education advising etc.

Participants were also asked what programs and services they use when they come to American Corner. The table below presents the findings:n=34

Table 1: Programs and Services offered at Mzuzu American Corner

Response	Frequency	Percentage
Computer and Internet training	15	44
Mathematics quiz	12	35
Photocopying and printing	12	35
Watching films or videos	12	35
Attending programs on specific topics	9	26
Women History Month	9	26
World Aids Day	9	26
Studying in USA i.e. inquiring about scholarships, TOEFL, GRE and SAT tests	8	23
Attending conferences or seminars	7	20
Black History	7	20
Free Internet Access	7	20
YALI programs	6	17
English Learning program	7	12
International Day of the Youth	4	12
World Environmental Day	3	9
Entrepreneurship programs	2	6
USA Visa application process	2	6

Table 1 above shows that computer and internet training, mathematics quiz, photocopying and printing; watching films and videos; attending programs on specific topics; Women History Month commemorations are the most popular programs and services offered at Mzuzu American Corner. Following these are World AIDs Day commemorations, attending programs on specific topics, inquiring about scholarships TOEFL, GRE and SAT tests, Internet access, Black History Month Commemorations and attending conferences or seminars are programs and services users use at Mzuzu American Corner. Smithsonian Global (2016) supports these findings and has stated that at American Spaces visitors (mostly young people) appraise themselves about the United States of America, open access and free Internet, build job skills. Smithsonian Global points out that, one of the most innovative programs in American Corners is the Entrepreneurship Incubator that equips young people with experiences and skills that would help those starting businesses or finding new job skills. This finding ties well with the Attraction Theory (Shanthakumar and Xavier, 2001, p)in that the services used attract users because most schools do not have such services in their schools (secondary and primary schools).Furthermore, American Corners conduct workshops that engage the youth in the ways that are relevant to them (also tying very well with similarity factor, and familiarity factor of the Attraction Theory that says people like those who like them and those who have frequent contact with them). These finding agree with findings of a study conducted by Chawinga and Ngwira (2015) that established that Mzuzu American Corner is popular because of its services like photocopying, printing and Internet among others that are distinguished from other service providers. For example quality of print outs from American Corner are of high quality because the machines are service regularly and toner is always available.

Strategies Mzuzu American Corner Uses to Make its Services Unique

Participants were asked what American Corner does to attract and maintain its audience to its services and programs. Below are the reasons that were solicited from teachers from the surrounding primary and secondary school:

- Programs are designed to attract and engage targeted audiences.
- Programs are participatory engaging users in dialogue and hands-on activities.
- Programs are designed to promote critical thinking and innovation.
- Programs and services promote thoughtful discussions of issues affecting users.
- American Corner create a register for program attendees to use for future programs
- Sending promotional material like flyers advertising programs in advance
- Users are told about education opportunities in the USA

The above findings are supported by American Spaces (2017) that asserts that American Spaces provide public diplomacy programming designed to attract and engage targeted foreign audiences in open, participatory dialogue and hands-on activities. They are designed, configured, and equipped to promote critical thinking, innovation, and thoughtful discussions among the youth. In the same vein this finding auger well with the attraction theory whose purpose is to attract customers to are ward and pleasure. People are attracted to things that give them rewards and pleasure (Shanthakumar and Xavier, 2001).

Participants were asked what they liked most about Mzuzu American Corner. The table below presents the findings:n=34

Table 2:Strategies American Corner Use for Successful Programming

Response	**Frequency**	**Percentage**
Programs are organized based on user interest	18	53
The environment is attractive	17	50
The facility is free and open to everybody.	16	47

The furniture is comfortable	16	47
Users were always invited to programs	16	47
Users learn computer and Internet technology	14	41
Customers are served with refreshments	12	35
Users are free to discuss issues that affect them in a free environment	12	35
Program offer topical and current issues affecting the targeted audience	12	35
Topics discussed are relevant and educative	10	29
Programs are interactive	6	16

Table 2 above shows that Mzuzu American Corner programs are organized on the basis of responding to users interest, making the environment attractive, making the facility free and open to everybody, (Office of American Spaces, 2015). In addition, the table also shows that American Corner furniture is very comfortable, users are always invited to special programs, users learn computer and Internet technology, users are free to discuss issues that affect them in a free environment, audience are served with refreshments to put in them in relaxed mood, users learn technology free of charge, users freely discuss issues without fear of being censored, issues discussed are topical, current, relevant and educative.

These findings agree with Smithsonian Institution's(2015).This strategy is based on the attraction theory which states that people are attracted to physical appearance of things(Shanthakumar and Xavier, 2001). Mzuzu American Corner ensures that American Corner environment is attractive by providing good furniture, equipment and staff who are welcoming and friendly. American Spaces Idea Book that reveals that Office of American Spaces and Smithsonian Institution partnered and came up with a project known as Model American Space Project whose aim is to design modern American Spaces as attractive, innovative and interactive as possible where users can express themselves freely in a relaxed mood. Smithsonian Global (2016) nails it down by revealing that the purpose of this partnership is to create spaces that inspire visitors and engage young people in ways that are relevant to them. It further informs us that even the American Corner content and design of resources is designed to increase the appeal of programs.

Library managers and leaders of some Youth NGO's were also asked what was it that was offered at Mzuzu American Corner that is not offered in traditional library service. Below were the responses:n=6

Table 3: Uniqueness of Programs and Services at Mzuzu American Corner

Response	Frequency	Percentage
Use of American Corner for educative and entertainment	4	100

Youth are trained in leadership skills to help them in life	3	75
American Corner is open to everybody	3	75
Users share ideas with foreign audience e.g. Americans	3	75
Users trained on entrepreneurial skills	3	75
Users connect with Americans and American Organizations	2	50
Users are trained in how to use new technologies	2	50
Users get free Internet access	2	50

Table 3 above shows responses on the uniqueness of Mzuzu American Corner from traditional libraries. The table shows that American Corner presents programs that are educative and entertaining, the youth are trained in leadership as well as entrepreneurial skills. The corner is also open to everybody contrary to traditional academic libraries that have defined users. Users at Mzuzu American Corner share ideas with the foreign audience and connect with Americans and American Organizations contrary to traditional libraries where users go there simply to read and borrow materials. Users at Mzuzu American Corner are trained in the use of new technologies, a service that is rare in many traditional libraries. Users at Mzuzu American Corner access unlimited free internet, a service that is controlled in many traditional libraries in Malawi. These findings are underpinned by the customer attraction theory in that the services provided at American Corner are helpful and rewarding to the users(Shanthakumar and Xavier, 2001).Ovidius University of Constanta (2014) has pointed out that American Corners offer feature and documentary films. These in most cases are educative and entertaining in nature and thus supporting the findings above. The findings are also supported by American Corner Belgrade (2017) that states that access to American Corner collections and services is free and open to all interested citizens.US Embassy in Nigeria (n.d.) adds to say that American Corners staff assists individuals how to use the resources provided in the American Corners, for example, books, magazines, computers and other new technologies. US Embassy in Nigeria (n.d.) points out further that in American Corner people connect with alumni and other foreign audiences to learn about their experiences in the United States of America.

How Communities are Benefitting from Mzuzu American Corner

Participants were asked how they benefit from Mzuzu American Corner programs and services. Below were their responses:n=34

Responses from teachers and students on how they benefit from the Mzuzu American Corner

Response	Frequency	Percentage
We feel safe, socialize and make friends	21	62
We discover and learn more about America	16	47
We are trained on computer and Internet use.	15	44
We use the American Corner room to conduct our programs	14	41
We learn how to keep ourselves safe from HIV/AIDS	14	41
We connect with opportunities, American people and organizations	10	29
We access Internet for free	10	29
We learn and practice English language	10	29
We learn how one can study in America	9	26
We are trained on entrepreneurship and leadership skills	15	15

The above table shows that users feel safe, socialize and make friends at American Corner, discover and learn more about America, get trained on computer and Internet use, use the American Corner room to conduct their programs, access Internet service for free, retrained on computer and Internet use, learn and practice English language, learn how one can study in America etc. These findings are supported by Fialho, (2013); Office of American Spaces (2015); US Embassy Belgrade, (2017); that has documented that in American Spaces, users interact with each other, build skills, learn English language, meet and interact with American experts or speakers, access free Internet, learn about health issues like HIV/AIDS etc. attraction theory anchors this finding well as people like the environment they are liked, associate with people who are like them and are in frequent contact with them(Shanthakumar and Xavier, 2001). The Mzuzu American Corner sets such an environment. The Mzuzu American Corner sets such an environment. Smithsonian Global (2016) narrate an experience of Liz Tunick Cedar when she visited American Space in Morocco, young adults shared with her, “This is where I feel safe, where I have made relations for life. It is my second home, my second family.” The findings are further supported by Smithsonian Institution (2015) that asserts that American Spaces are places to connect with peers, opportunity and America.

One of the frequent Mzuzu American Corner user commented, “I still value Mzuzu America Corner in my life. It is a place where my success in life emanated. I connected with one American who saw my plight in life. He offered to assist me and he has continued to do that to date. He said, "I will be sending you $500 every month till I die." That was starting point of my business. Now I import and sell vehicles." On the other hand one journalist expressed his appreciation to Mzuzu American Corner for providing fast and free internet access. He said, "When Mzuzu University will decide to close American Corner, we will go to the streets and march against the decision because we benefit so much as there is no any other reliable and better Internet service in Mzuzu than that at the Mzuzu American Corner."

Conclusion and Recommendation

This study has established that communities in Mzuzu feel safe, socialize and make friends at American Corner. They also learn information about the United States of America, get free Internet access and computer training, learn and practice English language, get trained in entrepreneurial and leadership skills and others. The success of Mzuzu American Corner information Service hinges on its strategies of being attractive, interactive, engaging, and free and open to everybody. This has encouraged users to take ownership of the facility and use it as their own. Relevance of programs and activities to the audiences has made users to benefit from the American Corner immeasurably.

In addition, results of this study advises how librarians and other information providers can design unique information services that are engaging, interactive, informing, educative and entertaining in libraries apart from the traditional way of providing access to information. The results also inform how librarians and information providers can create a lasting and engaging link between themselves and the communities they serve. This study has also demonstrated how a model library outreach program can be designed.

This paper, therefore, recommends that libraries and information centres should designate specific spaces/rooms to discuss topical issues with its users. Experts in the field could be invited to such programs to facilitate the discussions. The discussions should be designed in such a way that they should be engaging, interactive and educative to address specific challenges communities are facing. Some programs should specifically target the youth because they do have unique information needs that require a unique way of addressing them.

References

American Corner LECIAD (2016). The American Corner: the place to tap knowledge from: http://photos.state.gov/libraries/ghana/231771/PDFs/american_corner_brochure.pdf Accessed 8 September 2017.

American Corners (2014). Fact sheet from: https://photos.state.gov/libraries/nigeria/487468/pdfs/AC-FactSheet-03-2014.pdf Accessed 18 September, 2017.

American Institute in Taiwan (n.d.). American Spaces (American Corner and American Shelves from: https://www.ait.org.tw/education-culture/american-corners-and-american-shelves/ Accessed 6 January 2018.

American Spaces (2016). American Spaces Handbook, from https://americanspaces.state.gov/home/managing-your-space/handbookintro/Accessed 1st September, 2017.

American Spaces (2017). American Spaces Handbook, from https://americanspaces.state.gov/home/managing-your-space/handbookintro/ . Accessed 1st September, 2017.

American Spaces (2017). Vision of a modern American Space from: https://americanspaces.state.gov/home/wp-content/uploads/2017/01/VisionofaModernAmericanSpace.pdf Accessed 21 September 2017.

Asia-Plus (2017) US Embassy re-opens American Corner Dushanbe from: https://news.tj/en/news/tajikistan/politics/20160916/230908 Accessed 9 October 2017.

Chawinga, W. And Ngwira, F. (2015). The role of the Mzuzu American Corner Information Technology and Communication Centre, Malawi. Innovation: Journal of Appropriate

Fialho, L. P. (2013). The U.S. State Department's American Spaces Programs fact sheet

Lester F.K. (2005). On the theoretical, conceptual, and philosophical foundations for researching mathematics education. International Reviews on Mathematical Education (ZDM), 37 (6) pp. 457-467.

Office of American Spaces (2015). 2015 Annual Report from: https://americanspaces.state.gov/home/wp-content/uploads/2016/12/AS-Annual-Report-FINAL-508.pdf Accessed 21 September 2017.

Office of American Spaces. Bureau of International Information Programs, U.S. Department of State (2016). The Standards for American Space from: https://americanspaces.state.gov/home/wp-content/uploads/2016/12/StandardsforAmericanSpaces_V2_11.2016.pdf Accessed 21 September 2017.

Ovidius University (2014). American Corner Constanta: programs and activities from:http://en.univ-ovidius.ro/international/american-corner#programs-and-activities. Accessed 26 October 2017.

Shanthakumar, D.K. and Xavier, M.J.(2001).Customer relationship management: a research agenda. IN Customer relationship management: emerging concepts, tools and applications.- New Delhi: Tata McGraw-Hill.

Smithsonian Institution (2015). American Spaces Idea Books from: http://photos.state.gov/libraries/southafrica/231771/PDFs/AC_Design-Scope-of-Work.pdf Accessed 8 September 2017

Smithsonian Global (2016). Diplomacy in Design: Smithsonian and the American Spaces Program from: https://global.si.edu/success-stories/diplomacy-design-smithsonian-and-american-spaces-program. Accessed 21 August 2017.

US Consulate and Embassy in South Africa (n.d.). American Spaces from https://za.usembassy.gov/education-culture/american-spaces/ Accessed 6 January 2018.

US Embassy Accra, American Corner LECIAD (n.d.). The American Corner: the place where to tap knowledge fromhttps://photos.state.gov/libraries/ghana/231771/PDFs/american_corner_brochure.pdf Accessed 26 October 2017.

US Embassy and Consulate in Nigeria (n.d.). American Corners from: https://ng.usembassy.gov/education-culture/american-corners/ Accessed 21 September 2017.

US Embassy in Burma (n.d.) American Centre Yangon from: https://mm.usembassy.gov/education-culture/american-center/ Accessed 6 January 2018.

US Embassy in Romania (2016). 10th Anniversary of American Corner Cluj-Napoca from: https://ro.usembassy.gov/deputy-chief-mission-dean-thompson-10th-anniversary-american-corner-cluj-napoca/ Accessed 18 September 2017.

US Embassy Zambia, Public Affairs Section, Martin Luther King, Jnr. Memorial Library/IR (2005). Training module overview, American Corner Coordinator's workshop, February 27- March., Lusaka, Zambia.

US Embassy, Belgrade (2017). About AC. Available from: http://www.americancorners.rs/about-ac/en/Beograd/ Accessed: 21 September 2017.

US Embassy, Democratic Republic of Congo (2017). American Corners: welcome to American Corners in the Democratic Republic of Congo from:

https://cd.usembassy.gov/education-culture/american-corners/ Accessed 18 September 2017.

US Embassy, Ethiopia (n.d.). American Corners from: https://et.usembassy.gov/education-culture/american-corners/ Accessed 21 September 2017.

US Embassy, Georgia (2017). American Corners from: https://ge.usembassy.gov/education-culture/american-corners/ Accessed 21 September 2017.

US Embassy, Ghana (n.d.). American Corners from: https://gh.usembassy.gov/education-culture/american-corners/ Accessed 21 September 2017.

US Embassy, Malawi (n.d.). American Corner Mzuzu from https://mw.usembassy.gov/education-culture/american-corner-mzuzu/ Accessed 21 September 2017.

US Embassy, Namibia (2017). American Corners from: https://na.usembassy.gov/education-culture/american-corners/ Accessed 21 September 2017.

US Embassy, Romania (2014). American Corner, Constanta. Available from: https://ro.usembassy.gov/education-culture/american-corners-in-romania/constanta/ Accessed: 21 September 2017.

US Embassy, Serbia (2017). American Corners in Serbia from: https://rs.usembassy.gov/education-culture/american-corners/ Accessed: 18 September, 2017.

US Embassy, Zambia (n.d.). The American Corner in Kitwe at the Copper belt University available from:https://zm.usembassy.gov/education-culture/american-spaces/we.Accessed 6 January 2018.

WorldDenver (2015) American Corners - Spaces of Public Diplomacy from: http://www.worlddenver.org/page-1691404/3214224 Accessed: 19 October 2017.

PILLARS ANCHORING AN EMPOWERED LIBRARY AND INFORMATION ASSOCIATION IN THE SCECSAL REGION

Julirine Nakanwagi
Teaching Assistant
Uganda Christian University

and

Sarah Kaddu
Head of Department
East African School of Library and Information Science
College of Computing and Information Science
Makerere University

Abstract

The effective equation of providing optimum library and information Services in any country depends on comprehensive LIS education and training system; a legally instituted Professional Association; and a code of ethics. Provision of the three should ensure production of the expertise, the governance framework and ethical/professional behavior. The provision and practice of the above three pillars has led to commendable LIS provision in USA spearheaded by the American Library Association (ALA), since 1876; United Kingdom (UK), spearheaded by the Chartered Institute of Library and Information Professionals (CILIP) since 1877; in Nigeria spearheaded by the -Nigerian Library Association (NLA) - Nigeria Registration Council; and to some extent in South Africa, by the Library and Information Association of South Africa (LIASA). The Uganda Library and Information Association (ULIA) and the other LIS professional associations in the SCECSAL region are playing the 'catch up' game. They have established the Library and Information Associations but still lack effective accreditation system of programmes, the professional register, and a code of ethics. The aim of this paper is to review the pillars forming the foundation of a successful Library and Information Association. The objectives include: review of what these pillars are, the challenges faced, and the recommendations towards effective strategies to achieve adherence to the pillars of effective and dynamic delivery of LIS services in the SCECSAL region. The methodology involved literature review and an online survey of selected LIS Associations' leaders in the SCECSAL region.

Key Terms: *The Professional Association, Information professional, Professional register, Code of ethics, Accreditation.*

Beneficiaries: *Professional Association Leaders, LIS Educators, Ministries, Users, LIS students, and LIS professionals*

Background

The effective equation for providing Optimum Library and Information Services in any country seems to depend on Good LIS Education and Training system; Legally Instituted Professional Association; and a code of ethics. Provision of the three should ensure production of the expertise, the Library Association governance framework and ethical/professional behavior.
The provision and practice of the above three pillars has led to commendable LIS provision in USA spearheaded by the American Library Association (ALA), since 1876; United Kingdom (UK), spearheaded by the Chartered Institute of Library and Information Professions (CILIP) since 1877; in Nigeria spearheaded by the -Nigerian Library Association (NLA) - Nigeria Registration Council; and to some extent the Library and Information Association of South Africa (LIASA).

The Uganda Library and Information Association (ULIA) and many Library and Information associations in the SCECSAL region are steadily and persistently playing the 'catch up' game. They have established the Library and Information Associations but still lack effective accreditation of programmes, the professional register, and a code of ethics.

The aim of the paper is to review the Pillar provisions of a successful Library and Information Association/s. The objectives include: review of what these pillars are, the challenges faced, and the recommendations towards effective strategies to achieve adherence to the pillars of effective and dynamic delivery of LIS services in the SCECSAL region. The methodology included literature review, and online survey of selected LIS Associations' leaders in the SCECSAL region.

Methodology

An online survey was administered to five library associations within the region. These included: Uganda Library and Information Association (ULIA), Kenya Library Association (KLA), Tanzania Library Association (TLA), Library and Information Association of South Africa (LIASA), and Professional en Organisation et gestation des Bibliotheques des Archives et des Centres de Documentation, Burundi A total of ten responses was received. These responses were analysed and details presented. One to one interview was held with the President, Uganda Library and Information Association. Document reviews supplemented the findings.

Findings

The findings were presented majorly guided by the objectives of this paper. They are detailed below:

Elements of the Pillar foundations of a successful Library and Information profession.

Parameters of an Information professional

Parameters are attributes that should be achieved for a professional to be recognized and gazetted as a practicing expert. According to Kigongo-Bukenya (2000), the parameters are:

Approved specialized professional programme

A professional should have successfully completed a prescribed programme of study to acquire special knowledge and skills. An aspiring information professional in Uganda should undertake a BLIS/similar programme or a Masters or higher programme at the East African School of Library and Information Science or elsewhere at the LIS accredited programmes at other universities in Uganda for example Uganda Christian University (UCU) or Kyambogo University (KY) and others, Other professionals are qualified abroad e.g. School of Library and Information Science, University of Pittsburgh, Department of Information and Library Science, University of Wales, UK etc.

a) Monopoly of Expertise

The professionals should have monopoly of expertise and entitled to practice it exclusively on their clients. Nobody outside the profession should practice the profession. This is the "closed shop policy". It is enforceable by a Professional Register.

b) Full time engagement

A professional practices a vocation – a specific calling to a service. The implications of "full time engagement" are that: first, a professional practices as long as qualified. Secondly, the profession is the main source of income.

c) Affiliation to professional solidarity

A professional should associate and act in solidarity with fellow professionals. Professionals should therefore prescribe to the philosophy of the Professional Association and be active in its activities.

d) Bound by code of conduct

Each professional should be bound by standards, rules and regulations and controls specified by authority. This ensures that the client is not given below standard service or exploited. The professional is also safeguarded against the backlash of professional action, for example when the professional is castigated despite having acted in good faith and professionally.

Accreditation

The American Library Association website (ALA, USA) (2017) and the Chartered Institute of Information Professionals (CILIP) website (2017) -the Library Association (LA, UK) have effectively played the role of regulation through accreditation. Jacobs (1992) states the role of accreditation to regulate and thereby strengthening the Library Association as follows:

Credentialing focused on an institution is accreditation; and that focused on an individual is certification. Both accreditation and certification are essential and complementary, providing a quality control assurance for those entering the profession and continued competence through programmes of professional development and certification.

The process of accreditation entails two aspects, self-assessment and peer assessment. Self assessment is an ongoing process (3 to 5 years) and involves planning, goal setting and measurement against two dimensions: the goals and objectives set by the programme, and evaluation by peers against the set standards agreed upon and ratified by the profession. Peer evaluation is effected through visits by a panel of education and practitioners who analyse the programme against the standards of accreditation, specifying the quality of the curriculum, the facilities, the faculty, the students and the administrative structure.

Accreditation is therefore beneficial to the students, profession, faculty, administrators, practicing professionals and consumers of services because it ensures the quality of the LIS products. It also advances the status of the profession.

Professional Associations in developing countries such as the Uganda Library Association are not effectively involved in accreditation (researchers, 2017). These associations face crises of leadership, government recognition, apathy from the LIS professionals themselves, funding problems, and many other difficulties.

The Professional Register (PR)

A PR is a list of eligible professionals to practice the profession. An independent statutory body administers the PR. The authority is set up by law to exercise general supervision and control over professional education. The authority should:

i. Advise and make recommendations to government on matters relating to the profession, and
ii. Exercise through the Disciplinary Committee Control over professionals' matters.

Criteria for inclusion on the PR

The procedure for enrolment a practicing professional might differ from profession to profession. However, the requirements are similar:

i. Having successfully completed a programme of study.
ii. Having undergone successful supervision by a qualified professional in the field in order to get professional experience (e.g. internship for Medical profession).
iii. Being a citizen of the country (non-citizens may have other pre-requisites to meet for registration).
iv. In some cases areas of specialization must be fulfilled.
v. Legal and Medical Professions demand inspection of facilities and equipment of the chambers, clinics or hospitals to ensure minimum standards and security to clients.

Concept and Philosophy of PR

Professionals provide very important services, which would mean life or death to the clients. Consequently, stringent measures must be taken to ensure that enrolment is only after proper education and training, subscribing to the code of ethics, constant inspection, and in case of malpractices, facing disciplinary measures. This is a safety measure against impostors who is allowed to practice in the profession, would be dangerous to the clients and would tarnish the name of the profession.

The Code of Ethics

While the PR specifies the professionals gazetted to practice in the profession, the code of ethics gives guidelines to professional ethics, and performance in the field.

> Ethics comes from the Greek work ethos (Custom) and has to do with conduct, the theory of what is ultimately good or worthwhile, of good conduct and character, of moral rights and obligations (Boaz, 1972:pp242-244).

Socrates is believed to be the father of 'moral philosophy'. He echoed the words of the Delphic Oracle "know thyself" and declared that the life worthy of living was the intelligent life, the life of a person who understood what type of person he was and what values, aim and satisfactions were appropriate to him. On the other hand Plato's moral philosophy was based on "aristocratic rationalism" by which he means "the rule of the best". Plato talked of the need of avoiding the counter vices of too much or too little but strike the virtue of just enough – "the rational" or the "Golden Mean".

Concept of the Code of Ethics

Both Socrates' "moral rights and obligations" and Plato's "rule of the best" respectively have implications for the philosophy of the Code of Ethics. The American Medical Association talking of the Medical Code of Ethics specifies that a professional has far its prime object the service it renders to the public – reward of financial gain should be subordinate consideration. Whitaker also subscribe to the same view that the selfish interest must not be a dominant motive in professional work. He argued that the knowledge and skills professionals acquire or achieve are inheritances accumulated over time from our ancestors' toil, labour, and sacrifice. Professionals should therefore not exploit the public but should be trustees of such knowledge and skill.

Examination of the different codes show that while financial reward as a method of livelihood is essential, it should be secondary to the ideal service. The Uganda 'professional Codes' are no exception. The Advocates' (Professional Conduct Regulation, 1877) and the Hippocratic Oath both emphasize loyalty and devotion to the public.

Basis of Codes of Ethics

1. Golden Rule
   The basic consideration of any code of conduct should be the golden rule which must either be stated or implied: loyalty, honesty, generosity, courtesy, frankness, goodwill, cooperation, friendliness, charity and sincerity – which are general standards or ideals of conduct.
2. Voluntary Spirit
   Mode codes are voluntary because they are products of the professionals' volition and therefore the extent of its efficiency depends upon mutual understanding and common interest.
3. Machinery
   Each code should establish controlling machinery, and an arm in the form of Disciplinary Committee to correct deviations.

Characteristics of Code of Conduct

According to Kigongo-Bukenya (2000), any code of ethics (conduct) should incorporate the following:

(i) Duty to client and employer
    This is the guiding principle that priority should be paid to the interests of the clients within prescribed or legitimate requirements. The other dimension of this characteristic is that the professional must be loyal and obedient to the employers within legitimate requirements.

(ii) Updating Professional Expertise
Professional scenario is ever changing. Members must be competent in their activities including the requirement to keep abreast of development and those branches of professional practice in which qualifications and experience entitle them to engage.

(iii) Supervision of Staff and Trainees
Experienced professionals must provide supervision and training to the juniors to ensure steady professional development leading to independent responsibility.

(iv) Discrimination on race, colour, creed, gender and sexual orientation
Professionals should not exercise discrimination based on race, colour, creed, gender or sexual orientation in the execution of their services to clients except as limited by legal prescription.

(v) Confidentiality
Professionals should not divulge information gathered during the course of execution of duties to their clients. Clients are entitled to secrecy of what transpires between them and the professionals. However, professionals are absolved from the 'confidentiality – tenet' in so far as required by law or in answering questions under the Disciplinary Committee.

(vi) Personal Financial Interest
Members' actions and decisions should be determined solely by their professional judgment and they should not profit from their positions other than by normal remuneration or fee for professional services.

(vii) Criminal Offence
Members should report the facts to the Secretary of the Professional Association if convicted of any offence involving indiscipline or one, which brings the profession in disrepute.

(viii) Co-operation with disciplinary proceedings
Professionals must respond to any requirements from the disciplinary committee for comments or information on a complaint. For instance:

- Attend to committee proceedings when required to do so, and,
- Attend upon a nominated person for the purposes of receiving guidance as to future conduct if required to do so.

In summary, one to be an ideal professional, one should have achieved academic and professional qualifications; one should be loyal to the profession and should dedicate full time to it or related activities; one should be bonded by the Code of Ethics and should affiliate to the professional association and be active in its activities. The Code of Ethics is vital to the regulations and therefore success of any professional and should be adhered to. However, pitfalls should be avoided in formulating and adopting the codes. For instance principles of vague idealism should be avoided. Expectations of codes should be as realistic as possible. As one source has it:

"Codes should (not) dress too much like puritans and (should not) talk too much like saints".

Challenges of achieving the pillars

Through literature review and the online face to face interviews discussion, challenges rampant in the SCECSAL region in the context of implementing the Pillars of the profession were identified as follows:

a) Lack of the Professional Register. This has led to the open door profession…one where one whether qualified or not could partake the activities of the LIS professional activities with obvious consequences of inefficiency, etc. from the face to face interviews, the informant joked

"Without a Professional Register, anyone who works in a library is a librarian!"

b) Lack of a legal basis setting up the LIS profession thereby specifying the dos and don'ts in the professional arena.

c) Lack of a legally binding Code of ethics leading to misbehavior, under performance, corruption, etc. During the Face to face interviews it was noted that:

"The Code of Ethics should be in force to safeguard the professional actions of staff as well as safeguarding the users' confidentiality.

d) Lack of mandatory continuing education necessary for the professionals' up-dating of knowledge and competencies. For instance, all the respondents of the online survey, noted that:

"the scenery of LIS provision is ever changing. It is therefore absolutely necessary that continuing education cater for change"

e) Other challenges mentioned included: lack of initiative, leaders and funding to implements the plans

Conclusions

Judging from the interaction with the practitioners and other interested stakeholders, and literature review, it is clear that while LIS Professional Associations at large in the SCECSAL region, know the destination of the Pillars Provisions to Empower Library and Information Association, they have not reached the destination, due to factors discussed above. The consensus view from the online survey administered to library association leaders, it was agreed that what remained to be done are the following:

Establish Legal based LIS Professional Association and empower them to manage the LIS profession by empowering them to take charge of professional activities including among others to:

i. Establish a Professional Register and its management
ii. Establish and implement the Code of ethics – specifying what is legally binding to the information professionals Pillars
iii. Take possible action against the offenders.
iv. Provide Continuing Education to allow up-dating professional knowledge, skills/competencies.

In Africa, the Nigerian Library Association has made tremendous progress; the Library and Information Association of South Africa (LIASA) is on the right track. We should learn a lot from the American Library Association (ALA) and the Charted Institute of Information Professionals (CILIP) from UK.

References

Abidi, S.A.H. 1978. Improving Library and Information Training facilities in East Africa, Bonn, DSE.

Abbot, A and Wilensky, 1991. "The code of Professionalisation". Work and organization, 18: 355-84.

American Library Association Committee on Accreditation 1995. Outcomes' Assessment for Library and Information Studies: a resource manual. Chicago, Illinois, American Library Association, Office for Accreditation.

Boaz, M. 1972. Code of Ethics, Professional Encyclopedia of Library and Information Science, Vol. 5.

Branley, G. 1969. A History of Library Education. Haundem, Ardam Books

Bush, V. 1957. "Professional". Collaboration Science CXXV.

Butler, P. 1957. "Librarianship as a Profession". Library Quarterly XXI.

Carr-Saunders and Wilson, P.A. 1933. The Professions. Oxford, Clarendon Press.

Cogan, M.I. 1933. "Toward a definition of a Profession". Horald Education Reviews.

Flexner, A. 1951. Is Social Work a Profession? Proceedings of the National Conference of Charities and Curriculum, Chicago, Haldman.

Jacobs, J. 1992. Certification and Accreditation. Law Handbook, Washington D.C. American Society of Associations Executives.

Mason, R.O. 1990. What is an Information Professional? Paper Presented at the 1990 ALISE Annual Conference, Chicago.

Meglothlin, W. 1960. Patterns of Professional Education. New York, Pulmans 1960 and the Professionals Schools. New York, Centre for Applied Research Education.

Whitaker, C. Harris 1922. "The Interrelation of the Professions" The Annuals (American Academy of Political and Social Science).

APPENDIX 1: ONLINE SURVEY.

Introduction

Dear Colleague,

We are administering an Online Survey on the Status of LIS Professional Associations in the SCECSAL Region. The findings will be shared at SCECSAL XXIII, Entebbe, Uganda.

Kindly provide accurate answers to the questions. The processes will be confidential.

We thank you for your cooperation.

1. Name ……..
2. Country………………..
3. Responsibility in the Association…………..
4. What is a Code of Conduct?.................
5. Does your association have a code of conduct/ Ethics?........ if yes, what is it about? If No, any plans to have one soon?
6. Do you have an idea about the characteristics of Code of Conduct/ethics
7. What are the pillars of a professional association?
8. What are the challenges of achieving the pillars of professional association?
9. What is a professional Register?
10. What are some of the criteria to consider for Inclusion on the Professional Register?
11. Any other comments?

Thank you for your coopertion

Appendix 2: Literature review guide

The sub themes below guided the review of literature

1. Code of Conduct
2. Characteristics of Code of Conduct/ethics
3. Pillars of a professional association
4. Challenges of achieving the pillars of professional association
5. Professional Register
6. Criteria to consider for Inclusion on the Professional Register

BIBLIOMETRIC INFORMATION SERVICE FOR INFORMED SCHOLARLY DECISION MAKING AMONG ACADEMIC INSTITUTIONS IN EAST AFRICA

Robinah Kalemeera Namuleme
University Librarian
University of Rwanda

Abstract

The purpose of this paper is to explore the extent to which bibliometrics is incorporated in LIS education in Eastern Africa to equip LIS professionals with skills and competencies required to harness opportunities for libraries to develop and provide innovative bibliometric information services. This is particularly important in an era in which there is an urgent need for information professionals who can use bibliometric tools to analyze vast amount of information on a regular basis and generate reports that can be used to support research-related decision making. Qualitative approaches including the authors' extensive experience with and exposure to LIS education as well as practice as an University Librarian in both private and public universities in Uganda and Rwanda respectively, together with interviews and literature review were employed to generate insights into LIS education in East Africa with specific reference to bibliometrics. The research findings revealed that the majority of Academic Librarians were less familiar with with bibliometrics, but they viewed altmetrics as effective and were interested in receiving training to learn more about bibliometrics. Librarians who had been in the profession for over 20 years knew less about bibliometrics compared to those enrolled on Masters and Doctoral Library and Information studies. The study suggests that although bibliometrics has been reported to be very useful in solving diverse issues, however, LIS education programs in East Africa seem to have very limited coverage of bibliometric in course offerings. Incorporating bibliometrics into academic librarianship will go a long way in empowering academic librarians with skills that are required to provide high quality services in the scholarly communication process, as well as to increase the visibility and status of libraries with in the University communities.

Incorporating bibliometrics in LIS education can potentially enhance the professional profile of LIS professionals and may well increase the visibility of the libraries in relation to their wider academic environment where bibliometrics is getting increasingly important in terms of research evaluation. The paper provides a call to action to LIS *educators, including redesigning the curriculum to take care of current students and the almuni so as to fill the existing bibliometrics skills gap among Library and Information professionals in East Africa.*

Keywords: *Bibliometrics, LIS education, bibliometrics education, Academic Librarians, Scholarly Communication, East Africa*

Introduction

Research has reported increasing interest in bibliometrics, at the libraries as well as in academia in general is the growth in use of bibliometrics to evaluate research performance, especially in universities, and governments, and also by policymakers, research directors and administrators, information specialists and librarians and researchers (Åström, Hansson, & Olsson, 2011). Consequently, the roles of academic librarians are evolving to include the provision of bibliometrics services to researchers. Bibliometrics is a quantitative analysis of the academic output of people, institutions, facilities, regions and countries that uses statistical methods to make statements about the quantity, extent, frequency, significance and connections of publication (Åström et al., 2011; Ball, 2017)

Given the significant changes in systems of research management and policy, where evaluation of research outcomes are increasingly linked to the allocation of research funds on various levels - from individual scholars, to institutions and national systems for academic research, such as the national level distribution of government funds between publically funded universities, the role of bibliometric analyses cannot be over emphasized. Bibliometric methods are increasingly being utilized in the developed world to identify quantitative indicators for academic productivity and quality, including, demonstrating the importance and impact of one's own research and/or that of a research group which information can be useful for applying for tenure, promotion or grants demonstrating the value of a researcher's scholarly works to the institution as well as demonstrating return on investment to funding bodies, industry and the general public(Åström et al., 2011; Ball, 2017; Davis, Wilson, & Horn, 2005; Whitley, R. & Gläser, 2007). Furthermore Bibliometrics is being employed in identifying areas of research strength and weaknesses in order to inform future research priorities for an institution, identifying top performing journals in a subject area to support decisions on deciding where to publish - learning more about a subject area and identifying emerging areas of research (Tera Malone, 2016). Additionally Bibliometrics can be used to identify top researchers in a subject area. This can be useful for locating potential collaborators or competitors and informing the recruitment process.

The motivation for this paper comes from the premise that despite the fact that roles of academic librarians are evolving to include the provision of bibliometrics services to researchers, solving diverse issues, however, LIS education programs in East Africa seem to have very limited coverage of bibliometric in course offerings and the majority of academic librarians in East Africa do not seem to be prepared to provide bibliometric services.

This could account for scant application of bibliometrics to identifying the quantity and structure of literature on a specific subject, examining the growth of literature output in a subject during a identifying country-wide distribution of research literature in a particular subject, comparing and measuring the growth rate of literature on a particular subject in various countries and analyzing the authorship pattern of literature on a particular subject published from various countries as well as quantitatively assessing the core journal titles and less used or border lined publications in particular disciplines; interrelationships between authors from different institutions also aiding librarians in evaluating the effectiveness of their holding within the East African region. The paper is relevant to both Library and Information Science Educators and LIS professionals. The motivation for choosing this aims is that the effective provision and interpretation of bibliometric reports has ramifications at institutional, regional and global levels. For instance, data comparing the number of articles published on a particular subject can be used to identify potential partnerships with in the region and/or beyond, or an aspect in which there has been limited research.

Methodology

Qualitative approaches, including face to interviews were employed during a short course in Bibliometrics for 16 Academic Librarians in Rwanda. Furthermore telephone interviews were conducted with selected academic librarians from Uganda who had completed their studies in the 90s and early 2000s as well as academic librarians who are currently enrolled for Masters and Doctoral studies at the East African School of Library and Information Science.

The respondents were requested to share their experiences with bibliometrics, including familiarity the bibliometric tools and how they had applied bibliometrics to respond to needs by their Vice Chancellors and academic staff to support research related decision making within their institutions. The respondents were also asked for their comments about areas for improvement for bibliometrics.

Findings

The first question elicited the respondent's familiarity with bibliometrics. When asked how familiar they were with bibliometric, including the main metrics and main bibliometric tools used to measure the impact of research outputs and publications, only one respondent out of the 16 respondents in Rwanda reported to be familiar with them while the majority indicated no familiarity with the main metrics bibliometric tools. The response from the Ugandan counterparts indicted limited familiarity with metrics and bibliometric tools.

The respondents were requested to indicate whether they are had been called upon by the academic staff and/or their Vice Chancellors to provide metrics to support research related decision making within their institutions, including promotion, research funding and trending research. The respondents from Rwanda reported that they had received such requests but lacked the competence to conduct bibliometric analysis. Their counterparts in Ugandan counterparts had received requests for bibliometric analyses but lacked the practical skills to conduct the analyses since thee training they has received had not enabled them to attain practical skills in conducting bibliometric analyses.

The respondents were requested to provide comments about what needs to be done to ensure that academic Librarians can harness opportunities that accrue from availability of digital bibliographic information and tools for analyzing this vast amount of information on a regular basis to support evidence based research related decision making at micro and macro-levels. All respondents suggested that both formal and informal training in terms of short courses and workshops would help to address the bibliometrics skills gap among academic Librarians in East Africa.

Discussion

This study has revealed that most academic librarians in from Rwanda who participated in the study were not very familiar with bibliometrics. This could partly be attributed to lack of Library and information Science Education in Rwanda and lack of courses on bibliometrics in Library and Information Science schools in Universities where the Rwandan academic librarians attended obtained their bachelors and masters training. On the other hand Academic Librarians in Uganda who had completed their LIS training in the 90s and mid 2000s were not exposed to any training in Bibliometrics which explained why they lacked familiarity with bibliometrics. This could be attributed to lack of short courses to facilitate continuous professional development. On the other hand respondents who were currently enrolled on Masters and Doctoral studies in Library and Information Science were more familiar with bibliometrics although they expressed lack of practical skills needed to conduct bibliometric analyses. The finding of the current study are collaborated by studies in the developed world such as (Zhao, 2011) in which very limited coverage of bibliometrics in Library and Information Science programs was reported. The findings of the current study are also confirmed by a study conducted in Australia (Davis et al., 2005) where it was reported that no Australian University taught infometrics. The current study suggests that a need for education regarding bibliometrics for Academic Librarians in East Africa to enable them to relevant in the current academic environment.

The current study also suggests that while University libraries in Europe are increasingly focusing on development of knowledge and services related to scholarly communication other than the searching and retrieving of scholarly information as reported by (Åström et al., 2011) University Libraries in the East African region are a large extent focusing energies on issues concerning the acquisition and organization of its collections, as well as searching and retrieving information for the users of the library. The paper suggests that LIS schools need to incorporate bibliometrics into the curriculum as a way of redefining and widening of the professional role of LIS professionals so as to enable them to support the scholarly communication process, as well as to increase the visibility and status of academic libraries.

Conclusion

The rapid technological advances have transformed librarianship and LIS as a field of practice and of research. The literature advocates for librarians to take up these cutting-edge technologies to remain relevant an academic environment where many activities that traditionally have been part of the core of the field and the profession, to an increasing extent have come to be performed by others. However, there is little the current research has highlighted a big skills gap which when not filled will leave academic librarians irrelevant due to inability to conduct systematic evaluations of research systems and institutions, particularly in relation to allocation of research funds, new possibilities and expectations. These findings suggest that the need for LIS educators in East Africa need to adapt the curriculum to take on an active role in a range of different aspects of scholarly communication, including training in doing bibliometric analyses cannot be over emphasized.

The results of this study also indicate increased opportunities for academic libraries, because conducting bibliometric analyses that can lead to evidence based decision making has the potential to strengthen the position of libraries within the context of the university, including the Senior Management, researchers and the students. By showing the benefits of bibliometrics to both university senior management and to the research community, academic libraries will take on a position more central in the development of their universities and thus be perceived as the vehicles to attaining research-led status.

Limitations of the study:

A limited number of academic Librarians in Rwanda and Uganda participated in the study. With these limitations it is not appropriate to generalize the study findings outside of the group of librarians who responded. Nonetheless the study provides rich insights into the need for LIS schools in East Africa to respond to bibliometrics-skills needs of the current students and the alumni.

Future Research

Future studies that produce concrete evidence would be invaluable to the profession. One potential direction for future research might include in-depth interviews with academic librarians who are using bibliometrics in their jobs to discover how they are using them and for what purposes. It might also be useful to explore the opinions of academic staff, and vice chancellors to obtain their perceptions about the contribution of bibliometrics to research –related decision making, including choice of research focus, allocation research funds and academic staff promotions.

References

Åström, F., Hansson, J., & Olsson, M. (2011). Bibliometrics and the Changing Role of the University Libraries, 1–12.

Ball, R. (2017). *An Introduction to Bibliometrics :New Development and Trends* (1st ed.). Chandos Publishing-Elservier.

Davis, M., Wilson, C. S., & Horn, A. (2005). Informing decision-making in libraries: Informetric research as input to LIS education and practice. *Australian Academic and Research Libraries*, *36*(4), 195–213. https://doi.org/10.1080/00048623.2005.10755310

Tera Malone, S. B. (2016). Academic Librarians' Knowledge of Bibliometrics and Altmetrics. *Evidence Based Library and Information Practice 2016, 11.3 Evidence Based Library and Information Practice*, 34–49.

Whitley, R. & Gläser, J. (Eds. . (2007). *The changing governance of the sciences: The advent of research evaluation systems.* Dordrecht, Germany: Springer.

Zhao, D. (2011). Bibliometrics and LIS education: How do they fit together? *Proceedings of the Association for Information Science and Technology*, *48*(1), 1–4. Retrieved from https://onlinelibrary.wiley.com/doi/epdf/10.1002/meet.2011.14504801190

LIBRARY AND INFORMATION SERVICES TO IMPROVE HEALTH CARE

ENHANCING ACCESS TO HEALTH INFORMATION AT ALBERT COOK MEDICAL LIBRARY, MULAGO HOSPITAL

Aisha Nannono
Librarian
YMCA Comprehensive Institute, Kampala

and
Racheal Nanono
Librarian
YMCA Comprehensive Institute, Kampala

Abstract

Health is considered to be the heart of global development agenda because it's a crucial measure of human development. It is believed that when the population is in good health, it is likely to achieve the sustainable development goals. In an effort to promote physical and mental well-being, and to extend life expectancy for all, the UN Agenda 2030 states that the world must achieve universal health coverage and access to quality health care. No one must be left behind. The study intended to investigate how Albert cook Medical library, Mulago enhances access to health information to the communities it serves. The objects of the study are to identify information sources at Albert Cook Medical Library, to establish current access to health information, to establish challenges that hinder effective access to health information. This study employed interviews and observation methods for data collection. The findings revealed that various information sources are provided such as textbooks, academic medical journals, to mention but a few. It also revealed the different sections namely open and closed access and how information is accessed. Based on the inadequate information resources and power outages were some of the challenges faced. The paper concludes by recommending a standby generator and purchase of more relevant and updated information resources be made.

Key words: *Health information access, Health information, Medical libraries*

Background of the study

Health information provision is seen as major aspect that facilitates effective health information access in the community. Both the health professionals and members of the community who are the consumers of health services need health information service provision for a healthy society. Ibegwam (2013) suggests that the access to health information should be considered as equally important as to access to drugs and equipment. According to him all are essential tools in the delivery of safe, efficient and effective care and /or advice. The Libraries such as medical libraries play an important role in the dissemination of health information and the promotion of healthy lifestyles. These libraries can also reach out to vulnerable communities by making health information accessible at the point of need; therefore, librarians should strive to meet the health needs of the community (Ibegwam, 2013).

Librarians working in health institutions provide valuable information to consumers by marketing and creating awareness of their services. This is achieved through selecting, personalizing and filtering quality information to specifically meet their unique needs (Kamel, 2003). Zippers et al (2006) stated that Medical Librarians can play an expanded role in health provision by accessing and reviewing medical information and therefore, resources and strategy experts in identifying and disseminating reliable information to different heath information seekers.

Albert Cook Medical Library was established by Dr. Albert Cook in 1924. Later, when the Faculty of Medicine was established in 1946, the library started serving higher medical education. The Library houses an archive of the Sir Albert Cook's original hand-written patient records dating back to 1900. In 1965, the medical library was named after its founder, hence its official name "Sir Albert Cook Memorial Library". The Medical Library is a branch of Makerere University Library Service. It is Uganda's major Biomedical/Health Sciences Library. In 1990, SatelLife introduced the library to electronic resources using e-mail. This opened the doors to accessing current literature and facilitating document delivery.

Statement of the Problem

Provision and access to information by libraries is the major aspect to support not only learning but also access to information by users which is valuable for solving human health challenges. Wander Wagacha, (2007) stated that appropriate information provision about various diseases, prevention, and treatment and care services can result into proper decision making as regards to healthy living. This is also legally provided for by the laws of Uganda, specifically the Access to Information Act, 2005. For such information to be used successfully, it must be available, accessible and usable. However, according to Otike and Omboi (2010), most librarians and libraries are adamantly refusing to adhere to the changing needs of users coupled with constant resistance to change from the traditional librarianship to the present user centered services and many other obstacles such as funding. From the above descriptions, it is evident that a lot needs to be done to improve provision and access to information by users in medical libraries. The need for this study.

Objectives of the study

i. To identify information sources at Albert Cook Medical Library.
ii. To establish current access to health information.
iii. To establish challenges that hinder effective access to health information.

Literature Review

Health Information

Health Insurance Portability and Accountability Act (HIPAA) (2005) defined health information as "any information whether oral or recorded in any form or medium, that was created or received by health care provider, health plan public health. Information is a prerequisite to the development of any nation and is a driving force for development, whether economic, social, or political. Information is also an indispensable contributor to good health outcomes, and a critical element of well-functioning health systems. For these reasons, universal access to health information is a prerequisite for achieving the Millennium Development Goals (Godlee et al., 2004).

It is important to note that, for information to be used, it must be available, accessible, and usable, and absorbed by the recipients of the information (Wagacha, 2007). This collaborates with what Zippers et al (2006) stated, that Medical Librarians can play an expanded role in health provision by accessing and reviewing medical information and therefore, resources and strategy experts in identifying and disseminating reliable information to different heath information seekers.

To achieve physical access to the sources, the individual user has to know that the information exists, where it can be found, and how to navigate the institutional structures to reach it (Burnett, Jaeger, & Thompson, 2008). The individual may also need help to understand, and act on health information, especially written information (Colledge et al, 2008).

Information sources in Medical Libraries

i. Ibegwam (2003) identified different information sources and their formats in medical libraries
ii. All printed monographs and textbooks that are available in Medical libraries, Faculty libraries, Department resources and even the Medical Records Departments are in printed format.
iii. Information in digital storage devices like MEDLINE on CD-ROM, reference updates, provision of computers are in form of Stand-alone-computing.

iv. Web and the internet, internet gateways such as Health links are Internet based computing format.
v. Television, radio, newspapers-Mass media

Health Information Access
Health information access is the patients' ability to identify and obtain relevant, accurate and suitable information to satisfy health information needs. Lack of access to health information is a problem because this might create a vacuum in patients understanding of their diseases and ultimately affect their perception of their capability to manage these diseases (Anyaoku and Nwosu, 2017).

Challenges faced in Medical Libraries
According to Covell et al (1985) there are those problems that arise as a result of inadequate resources, untrained human resources, infrastructural problems include power outages. Others are lack of awareness, access training and time. In addition, Broadnax (1995) in Milimo & Tenya (2013) observed that in many communities health libraries are struggling with slashed budgets, reduced staff and competing priorities.

Methodology

This study employed a qualitative research design. The study employed interview and observation methods to collect majorly qualitative data from the respondents. The study population comprised of medical students of Mulago Hospital as well as the staff of Albert Cook medical library. The study focused on medical students because they are the primary users of the library and they practice from Mulago Hospital where this library is located. The students included practicing doctors and nurses. Ten (10) medical students were randomly selected from a pool of 70 students who were in the library at the time of data collection. Additionally, four (4) library staff was purposely selected out of the fifteen Medical Librarians, making a total of fourteen (14) participants which formed the sample size for this study. A descriptive analysis technique was used to analyze the data collected.

Findings of the Study

Objective One: Health information sources in Albert Cook Medical Library
The findings of this study showed that the sources of health information resources at Albert cook library, Mulago are mainly academic medical journals, scholarly magazines, newspapers, Medical Atlases for students, Encyclopedias, Government reports related to health such as reports on immunization, secondary sources of information that is dissertations and text books which are medical related were indicated by the participants of this study. This finding concurs with Mohammed & Abule, (2014) who carried out a study on An

Examination of health information service provision at Federal Medical Center, Katsina. The authors indicated that books and periodicals such as medical journals, newspapers, and magazines are some of the information sources used in Medical libraries.

Formats in which information is delivered in Albert Cook Medical Library

Findings also revealed that printed materials such as books and journals are the major forms in which health information sources are presented, they are also presented in electronic from the internet such as the electronic resources' databases such as HINARI, ScienceDirect, MEDLINE and others on DVDs and CDs. In support of this, Ibegwam (2013) carried out a study and observed that information formats such as books and journals are the major forms in which health information is presented in Nigerian Libraries.

Objective Two: Access of Health Information in Albert Cook Medical Library

Finding reveal that the basic change in information access has caused everyone to think of information differently and has changed expectations on how information can be accessed and what kind of information is available. Library users in Albert Cook Medical Library, Mulago access different printed information through two different sections;

i. The open access where a medical student or medical doctor picks the book from the shelves, takes to the issue desk and with the help of the Librarian the book is lent out to him or her for two weeks.
ii. With the closed access/reserve section library users ask for books they want and leave their Identity cards behind with this, users are not supposed to move out with the materials. Electronic health information is accessed from the library computer laboratory. Some health information databases require passwords in order to access them. Passwords are pined on the laboratory notice board which makes it easy for anyone to access.

Objective Three: Challenges in Albert Cook Medical Library

According the data collected it showed that both the medical library staff and the users face challenges.

Challenges of Albert Cook Medical Library in Availing Information to Users

i. Inadequate space; this is not enough in that one staff was quoted saying: *"the space is not enough and even the extension they promised we have no access to it because is not yet complete"*.
ii. Inadequate resources such as books, the participant interviewed revealed that the relevant books are few in number compared to the

number of users is a challenge as seen with the previous researchers in the Literature review.

iii. Computers are also not enough and this is coupled with the challenge of unstable internet. This limits the staff from providing the users with the information at the time of need.
iv. Power outages are also a challenge too as Broadohax (1995) also states that infrastructural problems such as power outages.
v. In Albert Cook Medical Library they face the challenge of limited budget. Wasike, & Tenya, (2013) stated inadequate funding for purchase of health information materials at Kenya Medical training college. It was also found out that Donors tend to give them outdated books which are not required by users.
vi. It was also found out that patients are not allowed to access the Library and even outsiders such as external researchers who tend to use the facility have to pay some fee. Some of the respondents interviewed revealed that this comes as challenge to these external users who might have the need for some health information and are denied access to the information because they don't have money at that particular time.
vii. This also comes as challenge to the patients where for them they are totally not allowed to access the information from the Medical Library yet as patients they also have need to access this health information so as to satisfy their various health information needs as defined by (Ebele and Obiora, 2017).

Challenges faced by users of Albert Cook Medical Library

i. It was discovered that there were inadequate relevant books in the library, this limits the access of the necessary health information by users. This challenge is marked by both the staff and the users.
ii. They also complained about the internet being on and off and having few extension cables yet most of them have their personal computers which they can use instead of the Library computers.

Recommendations

i. A Stand by generator is required in order to solve the unnecessary power outages. Mohammed & Abule, (2014) also suggested an alternative power supply to solve on the problem of power outages.
ii. More funding to purchase relevant books should be provided so that users can all access the required health information on time. Wasike, &Tenya, (2013), also suggested the need for more funding of health care information.

iii. More relevant and up to-date books and other health information materials should be purchased in order reduce or even eliminate the inadequacy of information materials.

iv. Patients should be allowed to access the Library since the library is within the Mulago hospital premises. Malpani, (1999) also suggested that if we empower patients with information about their medical problems, they can become educated persons in their own medical care.

v. Information literacy; this is a crucial skill where academic Librarians in Higher institutions for this case Albert Cook Medical Librarians since they are part of Makerere University can use it as an educational reform where skills such as efficiently locating, accurately evaluating and clearly communicating information in various formats can be taught to the users of the Medical Library.

Conclusion

There was access of health information at Albert Cook Medical library to a specific group of individuals, though we saw the need that the medical library can be open to the general public namely patients by providing current and reliable health information. Medical Librarians have a big role to play in improving the health information to the society. The library can as well partner with the surrounding community to ensure that every person gets access to vital health information.

References

Anyaoku, E. (2015). Evaluating Undergraduate Students Awareness and Use of Medical Library Resources: A study of Nnamdi Azikiwe University, Nigeria. International Journal of Library Science.

Chang, Y., Adiputra, K., Yang L. (2013). Public Librarian's Readiness in Providing Health Related Information. Qualitative and Quantitative Methods in Libraries (QQML), 1:79 –86

Luo, L., Park, V. (2013). Preparing public librarians for consumer health information service: A nation-wide study

Malpani, A. (1999). Health Library in India works to empower patients. USA National Library of Medicine.

Mohammed, B. & Abule, M. (2014). An Examination of Health Information Service Provision at Federal Medical Center, Katsina. Qualitative and Quantitative Methods in Libraries (QQML), 2:503 –508, Murray, J., Carey E., Walker S. (1999). The information needs and information seeking behaviour of medical research staff. Health information libraries journal.

Nasra, G. (2012). Enhancing access to health information in Africa: A librarian's perspective. Journal of Health Communication: International Perspectives.

The challenge of providing consumer health information services in public libraries. American Association for the Advancement of Science

Wasike, M. J. & Tenya, A. (2013). Provision of consumer health information: A case of Kenya Medical Training College and Provincial General Hospital, Nakuru County, Kenya. International Journal of library and information Science.

SOURCES OF INFORMATION USED BY NURSES IN CLINICAL PRACTICE AT THE UNIVERSITY TEACHING HOSPITAL IN ZAMBIA

Mercy Wamunyima Monde
University of Zambia Medical Library

Christine Wamunyima Kanyengo
Main Library, University of Zambia

and
Akakandelwa Akakandelwa
Department of Library & Information Studies
School of Education
University of Zambia

Abstract

The objective of the study was to investigate sources of information that nurses use in clinical practice at the University Teaching Hospital in Zambia. A case study was adopted that utilised both qualitative and quantitative methods of data collection. It was conducted in four admission units/wards namely; Medical, Obstetrics and Gynaecology, Paediatrics and Surgery of the University Teaching Hospital. The main instrument used to collect data was the questionnaire. Quantitative data was analysed using descriptive statistics and qualitative data was analysed thematically; using a purposive sample of 60 practicing nurses. Fifty-seven questionnaires were returned giving a response rate of 95%. The results of the study show that most nurses rely on doctors 50 (87.7%) as information sources followed by fellow nurses 48 (84.2%), workshops, seminars and conferences 46 (80.7%), printed standard protocols were at 43 (75.4%), hospital information at 43 (75.4%), patients records at 42 (73.7%), printed text books at 42 (73.7%), procedure manuals 40 (70.2%), personal experience 38 (66.7%) nursing journals 34 (59.6%), leaflets 34 (59.6%), newspapers 29 (50.9%), television 28 (49.1%), radios 27 (47.4%), databases 26 (45.6%), and libraries 24 (42.1%). Conversional sources such as libraries, radios, television, nursing journals and databases/online sources were rarely used. The study concludes that there is need to promote the use of evidence-based sources of information for the nurses to use in their clinical practice.

Introduction

Nurses play a critical role in health care delivery in all countries. In developing countries this role is amplified by the fact there are not enough doctors to serve the entire population. To play this critical role, nurses require access to credible, evidence-based and easy to access sources of information. It has been argued that "access to relevant, accurate, and current information is becoming crucial for nurses to keep their knowledge up to date and adopt evidence-based practices" in their clinical care (Majid, et al., 2011). It is, therefore, considered desirable to explore what research information sources exists for nurses to use in clinical practice to satisfy their information needs; and then feed that information in their clinical practice. These information sources include print media, colleagues, meetings, lectures, workshops, the Internet and others. However, due to time constraints, many nurses may prefer to obtain information from resources that are convenient, easy to use, and reliable (Dee & Blazek, 1993). The study investigates the sources of information that nurses use in clinical practice at the University Teaching Hospital in Lusaka, Zambia. The University Teaching Hospital is the largest referral hospital in Zambia. The hospital is "an academic medical centre/university hospital with approximately 1,800 beds. It provides a full range of primary, secondary, and tertiary health and medical services on both an inpatient and outpatient basis. The hospital supports the mission of the School of Medicine (SOM), which focuses primarily on teaching and research, as well as the School of Nursing and other teaching programmes in a number of technical areas (Purvis, 1997, p. v). As a training site, the hospital supports the University of Zambia training in various disciplines such as Anaesthesia, Internal Medicine, Nursing, Obstetrics and Gynaecology, Paediatrics, Pathology and Microbiology, Pharmacy, Physiotherapy, Public Health, Psychiatry and Surgery (University of Zambia, 2015)

Literature Review

Access to relevant, accurate, and current information is becoming crucial for nurses to keep their knowledge up-to-date and adopt Evidence Based Practice (EBP). In this context, it is, therefore, considered desirable to explore what research information sources exists for nurses to use in clinical practice to satisfy their information needs and feed into practice. These information sources include print media, colleagues, meetings, lectures, workshops, the Internet and others (Ajayi, 2005). However, due to time constraints, many nurses may prefer to obtain information from resources that are convenient, easy to use, and reliable (Dee & Blazek, 1993).The study of information sources has further been categorised by researchers into three broad categories which are; print, electronic and human sources. In an ethnographic study which examined the factors that influence nurses' research utilisation behaviours and investigated their sources of practice knowledge, it was established that nurses categorised sources of information in four broad categories which are; social interactions, experiential knowledge, documentary sources, a priori knowledge (Estabrooks, et al., 2005). They discovered that nurses tend to prefer interactive and experiential sources of knowledge over more formal sources such as journal articles and texts. Researchers further note that, nurses most frequently used experiential knowledge sources ahead of their initial nurse education, workplace sources, physician sources, their intuition, and then research literature (Estabrooks, 1998). A similar strong preference for humans as information sources was identified by (Thompson, et al., 2001). In studies that evaluate nurses' research use in the context of decision-making, human sources of information, in the form of nursing colleagues, specialist nurses and other healthcare professionals, have emerged as extremely important. Other people (colleagues) are regarded by nurses as the most useful and most accessible sources of information and as such, are the most preferred sources (McCaughan, et al., 2002; Nwagwu & Oshiname, 2009; Thompson, et al., 2001; Thompson, et al., 2005). Marshall, et al., (2011) in their study found what they describe as "a pervasive oral culture", with a strong preference for information from colleagues to support clinical decisions; and people as information sources were seen as most useful and accessible in the clinical setting. Priority was given to those responsible for direct patient care within the clinical area. Text and electronic resources, also seen to be less accessible, mainly because of the time required to access the information within them. Participants stated that the conventional evidence-based practice process was too difficult and time-consuming for them to undertake. Furthermore, electronic sources of information did not rate as highly as their print counterparts. The perceived usefulness of information appeared to be premised on ease of use and access rather than accuracy and completeness. Library use among the nurses within the services they investigated was almost exclusively associated with continuing professional development or formal education. Librarians were not perceived as accessible, hence the low usage of libraries to access information for clinical practice (Marshall, et al., 2011). Similarly, in a survey conducted by Sigma Theta Tau International on evidence-based practice in 2006, it was discovered that colleagues and the Internet were the two most frequently used sources, followed by books and print journals and Medical libraries were reported as being rarely used (Sigma Theta Tau International Evidence-Based Practice Task Force, 2004). In contrast, in their survey based in two English hospitals, (Gerrish, et al., 2008) found that, while a similar priority was given to information from colleagues, information obtained from the Internet was ranked low in frequency of use. Researchers recognise that it is unclear from the responses whether they reflect lack of access to computer facilities or to lack of information technology or information literacy skills to support evidence-based practice (Ebenezer, 2015).

In a study conducted by Majid, et al., (2011) in Singapore's two public hospitals on adopting evidence based practice in clinical decision making, it was found that information on diseases, medicine, treatment were mostly used, and among the printed information sources, medical reference sources were the most frequently used, closely followed by health care pamphlets and information made available by health care companies and hospitals. The use and frequency of use of textbooks and journals, which included published research articles that could be used as evidence, was quite low. The study's findings are similar to an early study which indicated that nurses rarely visit libraries and do not read research journals unless they are engaged in further education (Blythe & Royle, 1993). Hiney (2005) examined the internet as a resource for nurses working in the Eastern Regional Health Authority in Ireland and its role in supporting their clinical practice and promoting their professional development. The researcher concluded that nurses working in Ireland did utilise the internet to varying degrees to support clinical practice and promote professional development and that geographic locations, support from services along with their length of service and internet literacy had an impact on utilisation. Among the electronic information sources, websites providing information about specific diseases were the most frequently used sources, followed by electronic information sources provided by the respective hospitals, including their hospitals. However, the reported use of Internet resources, nursing e-books, digital medical and nursing libraries, medical databases, and EBP-related blogs was quite low. The most frequently used human sources were nursing supervisors, ward or department colleague, and nursing management staff (Majid, et al., 2011). Other information which were not frequently used were information on hospital's standard operation procedures (Majid, et al., 2011). Similarly, O'Leary & Ni Mhaolrunaigh (2007) in their study found out that text-based sources of information were available to participants in various forms. Guidelines and assessment tools were frequently the only easily accessible potential source of research information and appeared to be the most regularly accessed non-human source of information. Most of the nurses had access to some nursing and medical books in their immediate work area for example; at ward level in an acute hospital; and reported referring to text when they came across something new to them and their colleagues. Majid, et al., (2011) further writes that drug databases and nursing texts were used most frequently.

Studies conducted by Scott, et al., (2011) have shown that nurses mostly use nursing newsletters reporting on projects, rather than the project publications themselves. More recent findings demonstrate that nurse decision-making is more influenced by their colleagues than research papers and they favour easily accessed, 'pre-packaged information' such as policies and guidelines over research reports (O'Leary & Mhaolrunaigh, 2012). This may be of concern, as these guidelines may or may not be research based (Bail, et al., 2009). In the case of the clinical environment, many researchers have concluded that nurses primarily use local sources of information in the context of caring for patients (Corcoran-Perry & Graves, 1990; Blythe & Royle, 1993; Thomas, 2012) These sources include co-workers such as doctors, pharmacists and other nurses. They also include laboratory results and patient records. As for information to support lifelong learning study, nurses identified journals as the most useful resource. This was followed by books, then websites, then electronic databases such as Cumulative Index to Nursing and Allied Health Literature (CINAHL) and

MEDLINE. However, Randell, et al., (2009) established that practice nurses used electronic databases, particularly Medline, CINAHL and the Cochrane Library. Approximately half of the practice nurses interviewed described having used one or more of the databases, although electronic databases were largely seen as tools to support studying, not as tools for accessing information in relation to day-to-day work.

Aim of the Study

The aim of the study was to investigate sources of information that nurses use in clinical practice at the University Teaching Hospital in Zambia.

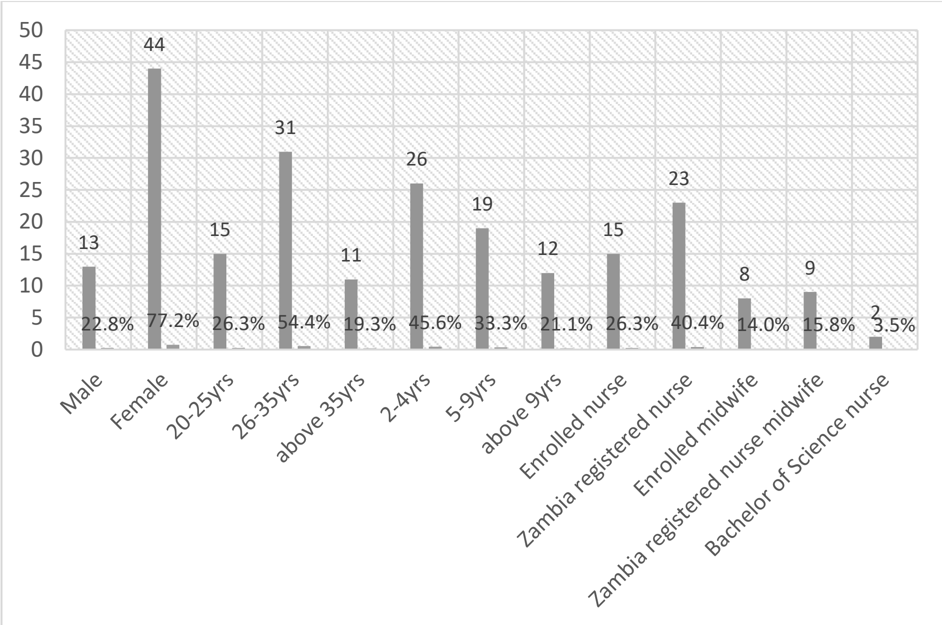
Methodology

This is a case study limited to the University Teaching Hospital Medical Admission Ward, Surgical Admission Ward, Maternity Admission Ward and Paediatric Admission Wards only. A questionnaire survey was utilised to collect data from the participants. Quantitative data was analysed with descriptive statistics using the Statistical Package for the Social Sciences (SPSS) whilst qualitative data was analysed thematically.

Results of the Study

Background Characteristics of the Respondents
Of the 57 respondents, 13 (22.8 %) were male, while 44 (77.2 %) were female. Fifteen (26.3 %) respondents were aged between 20-25 years, while 31 (54.4%) respondents were aged between 26-35 years and 11 (19.3 %) respondents were aged above 35; showing that most of the nurses under investigation were aged between 26-35 years. A total of 26 (45.6%) nurses had worked for 2-4 years at the hospital; while 19 (33.3 %) of them had worked for 5-9 years and 12 (21.1%) was the number of nurses who had worked at the hospital for more than 9 years. The data further indicates that most nurses had only 2-4 years nursing experience. In terms of educational qualifications, there were only 2 (3.5%) of the nurses who had nursing degrees while 23 (40.4%) were Registered nurses, 15 (26.3%) were Enrolled nurses and 17 (29.8%) were Midwives (Figure 1).

Figure 1. Background Characteristics of the Respondents



Sources of information that nurses use in clinical practice

he results show that most nurses rely on doctors 50 (87.7%) as information sources followed by fellow nurses 48 (84.2%), workshops, seminars and conferences at 46 (80.7%), printed standard protocols was 43 (75.4%), hospital information 43 (75.4%), patients records 42 (73.7%), printed text books 42 (73.7%), procedure manual 40 (70.2%), personal experience 38 (66.7%) nursing journals 34 (59.6%), leaflets 34 (59.6%) newspapers 29 (50.9%), television 28 (49.1%), radios 27(47.4%), databases 26 (45.6%), libraries 24 (42.1%). The results in Table 1 as ranked indicate that most nurses' preferred doctors and fellow nurses as information sources while very few (the least) nurses preferred to use libraries as sources of information.

Table 1. Information sources used by nurses

	Information sources	*Frequency*	*Percentage*
1	Doctors	50	87.7%
2	Fellow nurses	48	84.2%
3	Workshops, seminars, conferences	46	80.7%
4	Printed standard protocols	43	75.4%
5	Hospital information	43	75.4%

6	Patient records	42	73.7%
7	Printed textbooks	42	73.7%
8	Procedure manuals	40	70.2%
9	Personal experience	38	66.7%
10	Nursing journals	34	59.6%
11	Leaflets	34	59.6%
12	Newspapers	29	50.9%
13	Television	28	49.1%
14	Radio	27	47.4%
15	Databases	26	45.6%
18	Libraries	24	42.1%

As presented in Table 2, the majority 42 (77.8%) of respondents often consulted fellow nurses, with those who relied on personal experience at 42 (75.9%), doctors were consulted by 38 (70.4%) and patients' records were used by 36 (66.7) of the respondents. The least used source were libraries and nursing journals with only 5 (9.3%) of nurses indicating that they frequently used the sources. Other sources such as databases, television, hospital information, radio, procedure manuals, newspapers, printed books, standard protocols, workshops, seminars and conferences were rarely used. Table 2.

Table 2. Frequency of Use of source

Variable	*Frequency*	*Percentage*
Nurse colleagues	42	77.8%
Personal experience	41	75.9%
Doctors	38	70.4%
Patient records	36	66.7%
Hospital information	24	44.4%
Printed protocols	22	40.7%
Procedure manuals	20	37.0%
Printed textbooks	16	29.6%
Workshops/seminars	14	25.9%
Television	11	20.4%
Radio	10	18.5%
Databases	7	13.0%
Newspapers	7	13.0%
Nursing journals	5	9.3%
Libraries	5	9.3%

Reason for choosing the sources used

To investigate the reason for choosing the sources used, nurses were asked to describe the reasons for choosing the sources they used in clinical practice. Most of the nurses indicated that they used fellow nurses 40 (70.2), doctors 26 (45.6%), hospital information 19 (33.3%) and personal experience 26 (45.6%) and argued that they used them because these sources were readily available and accessible. Other sources used were patients' records, workshops, seminars and conferences, printed protocols and procedure manuals because nurses felt that these sources were easy to apply and useful, while those who used libraries and text books indicated that the sources were reliable and factual. Those who used newspapers, television, radio and databases indicated that the sources were helpful and relevant.

Nurses awareness of libraries within the University Teaching Hospital grounds

When respondents were asked to indicate whether they were aware of the information sources available within the hospital premises, 43 (75.4%) were aware about the Lusaka Nursing School Library, while 38 (66.7%) were aware about the UNZA Medical Library. This demonstrates that many nurses were aware of the available information sources within UTH.

Frequency of use of UNZA Medical Library and Lusaka Nursing School Library

However, although nurses were aware of the two libraries available within UTH, when nurses were further asked to state their frequency of use of the Medical and Lusaka Nursing School Libraries, the results indicate that only 3 (6%) frequently used the Medical Library while only 5 (10.2%) of the nurses frequently used the Lusaka Nursing School Library. The majority, 26 (52%) indicated that they never used the Medical Library and; 31 (63.3%) indicated that they never used the Lusaka Nursing School Library. These results demonstrate a very low usage of the Medical Library and Lusaka Nursing School Library respectively. See Table 3.

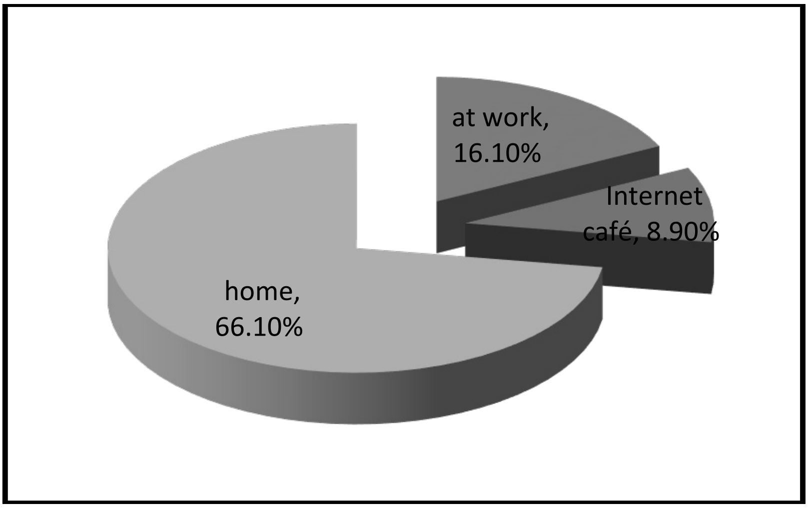
Table 3. Frequency of use of Medical and Lusaka Nursing School Library

Library	*Response*	*Frequency*	*Percentage*
UNZA Medical Library	Very often	3	6.0
	Often	6	12.0%
	Sometimes	15	30.0%
	Never	26	52.0%
Lusaka Nursing School Library	Very often	5	10.2%
	Often	5	10.2%
	Sometimes	8	16.3%
	Never	31	63.3%

Internet sources

To establish if nurses used the Internet or the World Wide Web (www) to access research information, the majority (80.7%) of respondents indicated that they used Internet. When asked to indicate where they accessed the Internet from, Figure 2 below shows that respondents had access the Internet from various places with most of the respondents indicating that they accessed the Internet from home using personal laptops/phones (66.1%) and at their work place (16.1%). Further findings indicated that some respondents occasionally accessed the Internet from an Internet café (8.1%). When the respondents were further asked other specific places where they accessed the Internet from, they indicated that they also accessed the Internet from the University of Zambia Medical Library.

Figure 2: Internet access points



The researchers further wanted to determine if there was a relationship between age of respondents and use of the Internet to access research information for use in clinical practice. Out of 57 nurses who answered this question, the results indicate (Table 4) that, most nurses regardless of their age used the Internet to access research information to use in clinical practice. Therefore, age was not a significant factor on the nurses' use of Internet.

Table 4: Age versus Internet usage

Age	*Yes*	*No*	*Total*
20-25yrs	14	1	15
26-35yrs	24	7	31
above 35yrs	8	3	11

Awareness of electronic sources

When respondents were asked whether they were aware of electronic databases for health information, most nurses indicated that they were not aware of the electronic databases with the results showing that only 19 (33.3%) were aware of Medline, (13) 22.8% were aware of PubMed, 7 (12.3%) were aware of Cochrane library, 5 (8.8%) were aware of the Health InterNetwork Access to Research Initiative (HINARI) and 2 (3.5%) were aware of the Cumulative Index to Nursing and Allied Health Literature (CINAHL). On the other hand, 38 (67.9%) were not aware of Medline; 44 (78.5%) were not aware of PubMed, 50 (89.3%) were not aware of Cochrane Library, 52 (92.9%)) were not aware of HINARI and 55 (98.2%) were not aware of CINAHL. The results demonstrate that many nurses at the University Teaching Hospital were not aware of most of the electronic databases listed in Table 5 below. Further respondents who were aware of these electronic databases were asked how often they used the databases. Results indicate that only 5 (8.8%) used Medline frequently, the other databases were rarely used. Table 5.

Table 5. Nurses awareness of Electronic databases

Awareness of e-databases	***Aware***		***Not aware***	
	Frequency	%	Frequency	%
Medline	19	33.3	38	67.9
PubMed	13	22.8	44	78.5
Cochrane Library	7	12.3	50	89.3
HINARI	5	8.8	52	92.9
CINAHL	2	3.5	55	98.2

To establish if nurses had book rooms within their wards for quick reference, respondents were asked if they had a reference / book rooms in their wards; (57.9%) indicated that they had no reference/ book room while (40.4%) indicated that they had a book room within the ward. Those who indicated that they had a reference/ book room were further asked how often they used the book room, the results indicate that the majority (26.3%) of the nurses indicated that they used it sometimes and another (26.3%) of them indicated that they never used it. Only (14%) said that they used the bookroom frequently, while (33.3) did not answer this question. Table 6.

Table 6. Frequency of use of bookroom

	Frequency	***Percent***
always	8	14.0
sometimes	15	26.3
never	15	26.3
Total	38	66.7

Discussion of the Findings

Information sources used by nurses

The sources of information mostly used by nurses were ranked and the findings revealed that the majority 87.7% of the nurses relied on doctors as information sources followed by fellow nurses 84.4%, workshops, seminars and conferences 80.7%. It is evident from the findings of this study that professional nurses relied mostly on interpersonal or human sources of information as compared to conversional sources such as libraries, online sources (databases) and journals, as established by the study that only 42.1% of the nurses used libraries and 45.6% used databases as a source of information. This poses a challenge; as information from fellow professionals may or may not be research based. The reason to choose human sources could probably be due to that human sources are readily available and accessible as one does not need to take time to look for human sources of information, while one may need to take time off to go to the library and search for the required information. Moreover, a nurse may need to have a computer and Internet to have access to online sources (databases). In addition, one needs to possess search skills to search from the thousands of information available online. While this study revealed that nurses mostly used interpersonal/human sources, it agrees with studies done by (Marshall, et al., 2011; Thompson, et al., 2001; McCaughan, et al., 2002; Nwagwu & Oshiname, 2009) who found a strong preference for information from colleagues to support clinical decisions. In addition, people as information sources were most useful and accessible in a clinical setting. Textbooks, libraries and electronic resources were less accessible, mainly because of the time required to access these sources.

This study also established that the most frequently used non-human sources of information were patients records (66.7%) followed by hospital information (44.4%). This is contrary to findings by (O'Leary & Ni Mhaolrunaigh, 2012) whose study established that guidelines and assessment tools were frequently the only easily accessible potential sources of research information and appeared to be the most regularly accessed non-human source of information. A further high ranked source found by Spenceley, et al., (2008) a frequently used source of information was nursing journals. This contrasts with the results of this study, as journals were ranked low by the nurses at the University Teaching Hospital as one of the sources used to access research information. The study further revealed that most of the nurses knew that a Medical Library and Nursing School Library existed within the hospital environment. However, the two libraries were reportedly not frequently used as established by the study that only 6% of nurses frequently used the Medical Library while 10.2% of nurses frequently used Lusaka Nursing School Library. These results agree with those of Thomson et al. (2004) who has posited that despite nurses' comprising (31%) of hospital employees, only about (6%) visit libraries to pursue their information needs in their clinical practice, education and research. An explanation for the low usage of the library could be because nurses only visit the library when in need of information for formal education and not information to update clinical practice. The other reason could be lack of time to search for information due to a high workload, inadequate library skills and lack of awareness of information resources that the library offers.

On awareness of specific electronic sources, the study established that many of the nurses were not aware of electronic databases as 98.2% were not aware of CINAHL, 92.9% were not aware of HINARI, whilst 89.3% were not aware of Cochrane Library, 78.5% were not aware of PubMed and 67.9% were not aware of Medline. It may be interesting to note that CINAHL is the cumulative index for nurses and allied workers containing thousands of latest nursing information, but it is the highest ranked on lack of awareness by the nurses. The implication is that if nurses at UTH are not aware of any single electronic database available, then they may fail to access and benefit from the millions of current information which is available through online databases that they could potentially use in their clinical practice. This scenario may have an impact on the quality of care provided by nurses in clinical practice, because if information is not accessed then it cannot be used. Knowledge may be available, but if it is not known then it cannot be accessed, therefore cannot be applied in any way to the nurses' clinical practice. Accessing electronic resources enhances access to vast amounts of information and may enable nurses to satisfy their information needs and potentially impact their clinical practice

According to Wilson's model of information behaviour, one of the intervening variables which may influence information seeking, access and use are the psychological variables such as awareness and attitude and source characteristics such as quality and availability of information resources (Wilson, 1997; Wilson, 1999). Awareness of information availability was found as an influential factor by (Gosling, et al., 2004; Spenceley, et al., 2008) who found that the more people are aware, the more the use of that information. Negative attitudes toward information and unawareness or not knowing information impedes the information uses of nurses. Further, explanation for the lack of awareness of electronic databases by University Teaching Hospital nurses could be due to the negative attitude towards information seeking and probably due to the culture of wanting to do research only when a nurse is pursuing formal education to upgrade themselves. The other reason may be attributed to the fact that the highlighted electronic databases may not even be readily available to the nurses as availability is a state of near presence and ready to use of information (Thompson, et al., 2001). These findings contradict those Randell, et al., (2009) of the United Kingdom who established that practice nurses there were aware of several databases such as Medline, CINAHL and the Cochrane Library as approximately half of the practice nurses interviewed described having used one or more of these databases. This is despite the fact that the electronic databases were largely seen as tools to support studying, not necessarily as tools for accessing information in relation to work. Only a few practice nurses had no experience of searching electronic databases and had not come across the electronic databases that were described. In addition, while the study established that most of the nurses were not aware of electronic databases, this study found that the majority (80.7%) of respondents used the Internet which many of the nurses accessed using their personal laptops/smart phones at home. The results tend to suggest that many nurses at UTH accessed the internet at home using personal laptops which may influence the usage of research information in clinical practice as it is not known what kind of information they accessed while at home. Moreover, the results seem to suggest that using the Internet at home does not guarantee the nurses' access to electronic databases, as access to electronic databases may require subscriptions and usually these are restricted to institutions that have subscriptions. The reason for accessing the internet from home could also be due to lack of time by nurses considering the nature of work they do which is very busy and also due to lack of access to computers within UTH as confirmed by (64%) of respondents that said that lack of information infrastructure at UTH hindered them from accessing information.

Conclusion

The study has established that in general, nurses mostly used doctors, fellow nurses, workshops, printed protocols, hospital information, patient's records, procedure manuals, personal experiences and textbooks as sources of information for use in their clinical practice. Additionally, people as information sources were the most used and accessible in the clinical setting. Textbooks, libraries and electronic resources were found to be less accessible, mainly because of the time required to access these sources. It is evident from the findings that professional nurses relied mostly on interpersonal or human sources of information as compared to conversional sources such as libraries, online sources (databases) and journals. It is important therefore, that medical libraries should work extra hard to ensure that they make it possible for nurses to have access to the relevant research information in a format that is accessible to them at the point care. Knowing the best sources of information for nurses in clinical practice is important so that information is made readily available to be used in nursing clinical practice.

References

Ajayi, A. N., 2005. Information seeking by nurses in Obatemi Awolowo University Hospital Nigeria. *Information Development,* 21(2), pp. 121-127.

Bail, K., Cook, R., Gardner, A. & Grealish, L., 2009. International Journal of Nursing Studies. *Writing ourselves into a web of obedience: a nursing policy analysis,* 46(11), pp. 1457-1466.

Blythe, J. & Royle, J. A., 1993. Assessing nurses' information needs in the work environment. *Bulletin of the Medical Library Association,* 81(4), p. 433–435.

Corcoran-Perry, S. & Graves, J., 1990. Supplemental-information-seeking behavior of cardiovascular nurses. *Research in Nursing & Health,* 13(2), p. 119–127.

Dee, C. A. & Blazek, R., 1993. Information needs of the rural physician, a descriptive study. *Bulletin of Medical Library Association,* 81(3), pp. 259-264.

Ebenezer, C., 2015. Nurses' and midwives' information behavior: a review of literature from 1998 to 2014. *New Library World,* 116(3/4), pp. 155-172.

Estabrooks, C. A., 1998. Will evidence-based nursing practice make practice perfect?. *Canadian Journal of Nursing Research,* 30(1), p. 15-36.

Estabrooks, C. A. et al., 2005. Sources of practice knowledge among nurses. *Qualitative Health Research,* 15(4), pp. 460-476.

Gerrish, K., Ashworth, P., Lacey, A. & Bailey, J., 2008. Developing evidence-based practice: experiences of senior and junior clinical nurses. *Journal of Advanced Nursing,* 62(1), pp. 62-73.

Gosling, S., Westbrook, J. I. & Spencer, R., 2004. Nurses' use of online clinical evidence. *Journal of Advanced Nursing,* 47(2), pp. 201-211.

Hiney, G., 2005. *An investigation of the internet as a resource for nurses working in Ireland and its role in supporting their clinical practice and promoting their professional development..* Dublin, s.n.

Majid, S. et al., 2011. Adopting evidence-based practice in clinical decision making: nurses' perceptions, knowledge, and barriers. *Journal of the Medical Library Association : JMLA,* 99(3), p. 229–236..

Marshall, P. A., West, H. S. & Aitken, M. L., 2011. Preferred information sources for clinical decision making: critical care nurses' perceptions of information accessibility and usefulness. *Worldviews on Evidence-Based Nursing,* 8(4), pp. 224-235.

McCaughan, D. et al., 2002. Acute care nurses' perceptions of barriers to using research information in clinical decision-making. *Journal of Advanced Nursing,* 39(1), pp. 46-60.

Naidoo, P., Jinabhai, C. C. & Taylor, M., 2010. Identification of sources from which doctors in private sector obtain information on HIV and AIDS. *South African Family Practice,* 52(2), pp. 137-141.

Nwagwu, E. & Oshiname, R., 2009. Information Needs and Seeking Behavior of Nurses at the University College Hospital, Ibadan, Nigeria. *African Journal of Library, Archives and Information Science,* 19(1), pp. 25-38.

O'Leary, D. .. & Mhaolrunaigh, N. I., 2012. Information seeking behavior of nurses: where is information sought and what processes are followed?. *Journal of Advanced Nursing,* 68 (2), p. 379–390.

O'Leary, D. F. & Ni Mhaolrunaigh, I., 2012. Information seeking behavior of nurses: Where is information sought and what processes are followed?. *Journal of Advanced Nursing,,* 68(2), p. 379–390.

O'Leary, D. & Ni Mhaolrunaigh, I., 2007. *Evidence Based Practice: An evaluation of nurses' use of research based evidence in their decision making,* Cork & Kerry, Ireland: Health Service Executive..

Purvis, G., 1997. *University Teaching Hospital in Zambia: The Strategic Plan Environment. Technical Report No. 14.,* s.l.: United States Agency for International Development.

Randell, R. et al., 2009. From pull to push: understanding nurses' information needs. *Health Informatics Journal,* 5 (2), pp. 75-85.

Royle, J. & Blythe, J., 1998. Promoting research utilisation in nursing: the role of the individual, organisation, and environment. *Evidence-Based Nursing,* 1(3), pp. 71-72.

Scott, S. D., VandenBeld, B. & Cummings, G., 2011. Optimizing clinical environments for knowledge translation: strategies for nursing leaders. *Nursing Leadership,* 24(3), p. 73-85.

Sigma Theta Tau International Evidence-Based Practice Task Force, 2004. Evidence-Based Nursing: Rationale and Resources. *Worldviews on Evidence-Based Nursing,* 1(1), p. 69–75.

Spenceley, S. M. et al., 2008. Sources of information used by nurses to inform practice: an integrative review. *International Journal of Nursing Studies ,* 45 (6), pp. 954-970.

Thomas, S., 2012. *A study of the information needs of nurses at a University Hospital Trust in the midlands: looking towards how information could be improved.* Aberystwyth: Aberystwyth University, East Midlands.

Thompson, C. et al., 2005. Barriers to evidence-based practice in primary care nursing – why viewing decision-making as context is helpful. *Journal of Advanced Nursing,* 52(4), p. 432–444.

Thompson, C. et al., 2001. Research information in nurses' clinical decision-making: what is useful?. *Journal of Advanced Nursing,* 36(3), pp. 376-388.

University of Zambia, 2015. *The University of Zambia Calendar 2014 – 2016.* Lusaka: University of Zambia..

Wilson, T. D., 1997. Trends in a critical review: Information behavior: an interdisciplinary Perspective. *Information Processing and Management ,* 33(4), pp. 551-572.

Wilson, T. D., 1999. Models in information behavior research. *Journal of Documentation,* 55 (3), pp. 249-270.

UTILISATION OF INTERNET HEALTH INFORMATION BY ADOLESCENTS IN OSUN STATE: ROLE OF THE SCHOOL LIBRARY MEDIA SPECIALIST

Iwok N. Shabi,
Medical librarian, Hezekiah Oluwasanmi Medical Library, Obafemi Awolowo University, Ile-Ife, Osun State, Nigeria.

and

Fadekemi O. Oyewusi
Senior Lecturer, Centre for Educational Media Resource Studies, University of Ibadan, Ibadan Nigeria.

Abstract

Globally, adolescents are the highest group of Internet users. The accessibility, affordability, anonymity and ease of use endear the Internet to adolescents probably due to their shyness about discussing sensitive health issues. The study identified the frequency and purpose of Internet health information utilisation by study respondents. A descriptive, cross-sectional survey was carried out among adolescents in public and private secondary schools in Osun-State, Nigeria. 1,200 school-going adolescents were selected using multi-stage random sampling. A validated, self-administered questionnaire elicited relevant data which was analysed using SPSS version 17. Majority of the respondents 798(67.3%) were in mid-adolescence. As much as 792(66.8%) and 129(10.9%) were from lower socio-economic classes IV and V . Only 2(16.7%) of the twelve schools surveyed had a school library with Internet facilities. Majority 747(63%) used the Internet weekly for personal health matters with 877(73.9%) access mostly from mobile phones. Only 148(12.5%) access Internet from school libraries. Health information frequently utilised was on sexuality/STI (59.7%), nutrition (45.2%) and body shape (37.1%). Although study respondents utilised Internet health information extensively, Internet access from the school library media centre was low. Information on very sensitive health issues was frequently utilised by respondents of this study. Accessing the Internet from the school library media centre will therefore provide a valuable opportunity for school library media specialists to improve the media and health literacy skills of school-going adolescents in Osun State, Nigeria.

Keywords: Internet Use; Health Information, Adolescents, School Library; Media Specialist

Introduction

The Internet has become a major source of health information among adolescents. Adolescents in contemporary times grow up alongside Internet technology hence they are referred to as 'digital natives' (Hargittai, 2010). For instance Internet - enabled devices now include not only computers but other hand-held devices such as cell-phones. Several studies have provided compelling evidence that the Internet is a favoured source of health information utilisation by adolescents (Berzekowski, Fobil & Asante, (2006); Nwagwu, (2007); Bamise, Bamise & Adedigba (2011).This could be because the Internet has become one of the most important mediums to educate and inform adolescents about health and medical issues because it provides a non- punitive, easily accessible space to find sensitive health information in addition to having a high level of interactivity. Cooper (2002) as cited in Kunnuji (2014) and Farmer (2014) suggest that adolescents are more likely to utilise Internet health information because of the availability, affordability and anonymity.

The American congress of obstetricians and Gynaecologists (2012) reported that majority of American adolescents utilise Internet health information .In Ghana, Berzekowski, Fobil and Asante (2006) described the extent of Internet health information utilisation by Ghanaian adolescents which was similar to reports of a Nigerian study by Nwagwu (2007) and a Ugandan survey by Ybarra, Kiwanuka, Emenyonu & Bangsberg (2006).The trend in existing literature portends that the Internet is a major tool for health information utilisation among adolescents globally, irrespective of their cultural diversity and socio-economic backgrounds; they share similar traits in Internet health information utilisation.

Adolescent utilisation of Internet health information is certainly not a new phenomenon. Miller & Bell (2012) found that the popularity of Internet among adolescents is due to its great potential in facilitating information searching and decision-making on self-care and health related issues. Several studies in developed countries and developing countries allude to the fact that adolescents go online almost on a daily basis to find health information (Kunnuji,2014;Glik, Massey, Gipson, Dieng, Rideau & Prelip, 2014; Tsai, Chau, Lin and Lin, 2013; Arulogun & Ogbu, 2016). Previously, Internet access by adolescents was limited to private and public spaces such as home, school, school library media centre and cyber cafes probably because the major device for Internet access was the desktop computer connected to Internet cables. Following the advent of mobile phones, i-pads, tablets and other handheld devices, Internet utilisation is no longer limited to certain places. In a Nigerian study by Kunnuji (2014) Internet access was greatest at cyber cafes followed by home access. The study suggested that school regulations prohibiting the use of cell-phones and similar devices in secondary schools explained the low level of school Internet utilisation.

Internationally, several studies have significantly associated socio-demographic factors with Internet health information utilisation (Lerin-Zamir, Lemish & Gofin, 2011; Ghaddar, Valerio, Garcia & Hansen, 2012). Adolescents all over the world are increasingly utilising the Internet for health information despite substantial variation in use in different countries of the world and in the various socio-economic groups (Arulogun & Ogbu ,2016). Rice (2006) reported that gender was one of the strongest predictors of Internet health information utilisation. Supporting this view, Helsper (2010) found that there are marked gender differences in Internet health information utilisation with regard to the purpose and type of online activities engaged in. Tsai, Chou, Lin & Lin (2010) reported that although Internet was an increasingly popular source of health information among Taiwanese adolescents, age, gender, being in school and sub-urban location were determinants of Internet health information utilisation .This study was informed by the Uses and Gratifications theory because it has been widely used to explain Internet utilisation to meet adolescent health information needs (Borzekowski, Fobil & Asante, 2006; Nwagwu, 2007 and Markwei & Appiah, 2016). The theory proposes that individuals actively choose media based on their needs and choice of media is influenced by information needs and the gratification or satisfaction obtained by using these media.

Hargittai (2010) alluded to the fact that although today's adolescents are 'digital natives,' they may have technology deficiencies or poor physical access to Internet facilities. Farmer (2014) observed that although filtering software limits adolescent access to valuable Internet health information, low or inadequate health literacy levels can cause adolescents to be ignorant about some aspects of health information. Consequently, they may not be able to ascertain the validity or reliability of information obtained before utilisation.

School library media specialists (SLMS) in their role as information gatekeepers and teachers seek, select, evaluate and utilise Internet resources and tools and give students instruction on how to use them. Lukenbill & Immroth (2009) asserted that School libraries and librarians play the role of health information gatekeepers for adolescents in their schools. Oyewusi (2016) stated succinctly that the SLMS must be a certified library media specialist who initiates, develops and operates information services and is competent to teach different information handling skills and strategies. SLMS's therefore have key roles to play in ensuring that irrespective of socio-economic background, age, gender or cultural background, all school going adolescents have equitable access to available health information.

According to the New Zealand National Library (2015) a school library media centre (SLMC) is a place which offers seamless access to information resources, apps, advice and support to the classroom, home and mobile devices 24/7. Oyewusi (2016) conceptualised the SLMC as a school resource offering equity of access, support and encouragement to all students irrespective of age, ability and socio-economic background. Buchi, Just and Latzer (2015) opined that Internet health information utilisation among adolescents is predicted by socio-demographic factors. Their study confirmed that socio-demographic factors account for up to 50% of the variations in Internet utilisation with age being the strongest predictor of health information utilisation. School Library media specialists(SLMS) are information literacy experts, uniquely trained and skilled to help all students develop reading and research skills (New Jersey Library Association, 2016) which explains why they are best suited to guide school going adolescents in their continuous search for health information from the Internet. Farmer (2014) alluded to the fact that some adolescents are struggling readers or may have language barriers which could hamper Internet health information utilisation.

IFLA School Library Guidelines (2015) as cited in Oyewusi (2015) declared that, 'a school library is a physical and digital learning space where reading, enquiry, research, thinking, imagination and creativity are central to students' information -to - knowledge journey and to their personal, social and cultural growth. The central focus of the SLMC are the students with its main purview as the information hub of the school. The school library media specialist (SLMS) therefore bridges the gap between the adolescents in the school and the information. It is therefore within the purview of the SLMS to create good rapport with the students and also be competent in teaching information handling skills in order to develop multi-literacies in students. The New Jersey Library Association (2016) recognising the importance of school library programmes reiterated that, ''access to a quality school library media centre staffed by a certified school library media specialists is a necessary part of every students education. Skills in navigating information literacy (which includes digital, visual, media, textual and technological literacy are best taught by certified school library media specialists.''

Objectives

The study addressed the following objectives: to determine the place of access of Internet for health information utilisation by the respondents; to determine the frequency of Internet health information utilisation by the respondents ;to ascertain the purpose of Internet health information utilisation by the respondents; to establish the status of the school library media centre and level of preparedness of school media specialists in enhancing Internet health information utilisation and to determine the relationship between socio-demographic profile and the extent of Internet health information utilisation by the respondents.

Methodology

The study was a descriptive cross-sectional survey .A questionnaire-based survey was carried out involving 1,200 school-going adolescents in senior secondary schools in Osun State Nigeria. Sample size was calculated using the Leslie Fischer's formula for sample size in population greater than 10,000 (Araoye, 2004). By multi-stage random sampling technique, 6 private and 6 public owned senior secondary schools were randomly selected from the 3 education districts in Osun State .Of the 1,200 questionnaire applied, 1,186 were found to be analysable giving a response rate of 98.8%.

Research instrument

The survey instrument consisted of 2 sections. Section A elicited information on the socio-demographic profile of the respondents. Socio-economic classification was based on the Oyedeji classification of socio-economic class (Oyedeji, 1985), which has been widely used and accepted by many researchers in Nigeria. Section B is a validated Internet health information utilization scale (Chronbach alpha 0.9) was adapted from Britt and Hatten's (2013) e-HEALS scale and Niemla, Ek, Eriksson-Backa & Huotari's (2012) health information literacy screening tool. It consist of is a 10 item scale tagged "Internet health information utilisation scale" (IHIUS). It elicited responses on self-reported "information utilisation" (purpose and frequency) of Internet health information resources using a 4 point Likert Scale. Data was collected between January and February, 2017. All data was analysed using SPSS version 17.

Results

Table1: Socio-demographic profile of school-going adolescents in Osun State

Socio-Demographic Variables	Levels	Frequency (f)	Percentage (%)
Age of the students (as at last birthday)	11-13yrs	137	11.6
	14-16yrs	798	67.3
	17-19yrs	251	21.2
	Total	**1186**	**100.0**
Gender	Male	570	48.1
	Female	616	51.9
	Total	**1186**	**100.0**
Socio-Economic Class	Class I	30	2.5
	Class II	102	8.6
	Class III	133	11.2
	Class IV	792	66.8
	Class V	129	10.9
	Total	**1186**	**100.0**
Religion	Christianity	610	51.4
	Islam	560	47.2
	African traditional religion	4	.3
	Others	1	.1
	Total	**11**	**.9**

Types of families	Monogamy	619	52.2
	Polygamy	331	27.9
	single parent	168	14.2
	Widowed	29	2.4
	Divorced	12	1.0
	No Response	27	2.3
	Total	**1186**	**100.0**

The socio-demographic profile of in-school adolescents in Osun State is as shown in table 1. It is shown in the table that more than half of the in-school adolescents that participated in this study were of age 14-16years. Gender distribution showed that more than half, 616 (51.9%) of the adolescents were females. Clearly, most 792 (66.8%) of the adolescents sampled for this study have parents from socio-economic class described by Oyedeji (1985) as class IV. A little above half 619(52.2%) of respondents came from a monogamous family while 331(27.9%) came from a polygamous family setting.

Table 2. Place of access of Internet health information

Place	Frequency	%
School library	148	12.5
Mobile phone	877	73.9
Cyber café	71	6.0
Friends' house	46	3.9
Parents Laptop	44	3.7
Total	**1186**	**100.0**

Majority of the respondents 877(73.9%) access Internet from their personal mobile phones while only 148(12.5%) access the Internet from the school library Internet facility.

Table 3: Descriptive analysis of school-going adolescents responses to frequency of utilization of Internet health information

S/N	Frequency of for ...	Daily	Weekly	Monthly	Never	$\bar{x}$	SD
1.	Sexually transmitted infections e.g gonorrhoea, chlamydia, HIV etc.	601 50.7%	205 17.3%	192 16.2%	188 15.9%	3.03	1.15
2.	Sexuality issues and other rapid	561	253 21.3%	210 17.7%	162	3.02	1.22

	changes in my body	47.3 %			13.7 %		
3.	Menstrual pain and disorders	446 37.6 %	320 27.0%	210 17.7%	210 17.7 %	2.85	1.11
4.	Healthy diet and other Nutritional issues	482 40.6 %	240 20.2%	172 14.5	292	2.77	1.22
5.	Issues related to pregnancy, abortion and associated complications.	254 21.4 %	565 47.6%	189 15.9%	178 15.0 %	2.76	1.12
6.	Body size, shape, body image or physique	371 31.3 %	346 29.2%	241 20.3%	228 19.2 %	2.73	1.21
7.	Upload and communicate validated and relevant health information on the Internet for the benefit of other Internet users.	350 29.5 %	277 23.4%	230 19.4%	329 27.7 %	2.55	1.18
8.	Adolescent contraceptive use	222 18.7 %	252 21.2%	210 17.7%	502 42.3 %	2.16	1.17
9.	Use and abuse of alcoholic beverages	213 18.0 %	190 16.0%	193 16.3%	590 49.7 %	2.02	1.17
10.	Health issues relating to smoking	225 19.0 %	166 14.0%	159 13.4%	636 53.6 %	1.98	1.20

Grand Mean= 25.87

Findings revealed that sexually transmitted infections such as gonorrhoea, chlamydia, HIV etc. ranked highest by the mean score rating ($\bar{x}$=3.03) and was followed by sexuality issues ($\bar{x}$=3.02) and menstrual pain and menstrual disorders ($\bar{x}$=2.85). On the other hand issues on adolescent contraceptives ($\bar{x}$

=2.16), drug use ($\bar{x}$ =2.02) and smoking related problems ($\bar{x}$ =1.98) were the least frequently utilised resources by rank.
Grand Mean = 25.87.

Interval	Total Mean Score	Remark
31-39		Daily
21 – 30	25.87	Weekly
11-20		Monthly
1-10		Never

Since 25.87 falls within the range of 21-30 interval, this implies that school-going adolescents in Osun State utilise Internet health information on weekly basis.

In Table 3, respondents were asked to indicate for what purposes they utilised Internet health information.

Table 4: Purpose of Internet health information utilisation by school- going adolescents in Osun State

	Purpose of Use	**SA**	**A**	**D**	**SD**	$\bar{X}$	**SD**
1.	Sexuality issues and other rapid changes in my body	513 43.3%	389 32.8%	162 13.7%	122 10.3%	3.09	0.99
2.	Healthy diet and other Nutritional issues	536 45.2 %	358 30.2 %	142 12.0 %	150 12.6 %	3.08	1.04
3.	Body size, shape, body image or physique	440 37.1 %	374 31.5 %	202 17.0 %	170 14.3 %	2.91	1.05
4.	Sexually transmitted infections e.g Gonorrhoea , Chlamydia, HIV etc.	366 30.9 %	353 29.8 %	240 20.2 %	227 19.1 %	2.72	1.10
5.	Upload and communicate validated and relevant health information on the Internet for the	341 28.8 %	378 31.9 %	232 19.6 %	235 19.8 %	2.70	1.09

	benefit of other Internet users.						
6.	Menstrual pain and disorders	326 27.5 %	366 30.9 %	254 21.4 %	240 20.2 %	2.66	1.09
7.	Adolescent contraceptive use	284 23.9 %	390 32.9 %	310 26.1 %	202 17.0 %	2.64	1.03
8.	Issues related to pregnancy, abortion and associated complications.	296 25.0 %	346 29.2 %	339 28.6 %	205 17.3 %	2.62	1.04
9.	Use and abuse of alcoholic beverages	275 23.2 %	268 22.6 %	353 29.8 %	290 24.5 %	2.45	1.10
10.	Health issues relating to smoking	248 20.9 %	274 23.1 %	357 30.1 %	307 25.9 %	2.39	1.08

Overall weighted Mean = 2.73

Key: SA=Strongly Agree A= Agree D= Disagree SD= Strongly Disagree

Findings revealed that sexuality issues and other rapid changes in the body ($\bar{x}$ =3.09) was the major purpose for which the in-school adolescent utilise Internet health information. Using the overall weighted mean of 2.73 as the benchmark for respondents' purpose of Internet health information utilisation, it could be inferred that Sexuality issues and other rapid changes in the body, nutritional issues and information about body size, shape, body image or physique were the major purposes for which Internet health information was utilised.

Table 5: Preparedness of the school library in enhancing Internet health information utilisation of the respondents.

S/N	School Library Media Centre facilities	No. of Schools	% of Schools
1	School library managed by a SLMS with varieties of books, Computer work station, Internet facilities with dedicated time for school library instruction/use.	2	16.67%
2	School library managed by a SLMS with varieties of books, Computer work station,	1	8.33%

	Internet facilities with dedicated time for library instruction/use.		
3	School library managed by a SLMS with varieties of books BUT no Computer work station, Internet facilities, or dedicated time for library instruction/use.	1	8.33%
4	School library with few books. No SLMS, Computer work station, Internet facilities or dedicated time for library instruction/use.	4	33.33%
5	No school library	4	33.33%

Objective 5: What type of relationship exists between socio-demographic factors (age, gender and socio-economic background) and Internet health information utilisation?

Table 6: Zero Order Correlation (Matrix Table) showing the significant relationships between Socio-demographic Factors (age, gender and socio-economic background) and Internet Health Information Utilisation

	Internet Health Information Utilisation	Age	Gender	Socio-economic status	Mean	S.D
Use of Internet Health Information	1				64.54	13.41
Age	$.108^{**}$ .000	1			15.30	1.60
Gender	-.035 .230	$-.120^{**}$ .000	1		-	-
Socio-economic status	$.089^{**}$ .002	$.234^{**}$ .000	.011 .702	1	3.63	0.85

The relationship between socio-demographic factors and Internet health information utilisation is as shown in table 6. Age and socio-economic class, had their respective beta weight values as.108 and .089 which were found to be significant at 0.05 level of confidence. Gender with beta weight value -.035 is not significant. This implies that age and socio-economic class had a positive significant relationship with Internet health information utilisation while gender had no significant relationship with Internet health information utilisation.

Discussions of Findings and Implications for SLMS

Place of Internet Access

Findings of this study indicate that mobile phones are the highest source of Internet access by the respondents of this study as shown in table 2 followed by the school library. The home which is symbolised by parents' laptops and desktops is the least used for Internet access. This is probably because the respondents are school-going adolescents who may feel shy about some health issues and therefore may prefer the privacy and ease of access offered by mobile phones.This peculiarity in the use of mobile phones to access Internet is similar to reports by Markwei & Appiah (2016) in a Ghanaian study of teen Internet utilisation. They noted that mobile phones are no longer the exclusive preserve of those in upper echelons of society because there are affordable ones in the market which explains why adolescents have increased Internet access on their phones. The overwhelming tilt to mobile phone Internet access could also be as a result of the fact that adolescents often seek information on sexual and reproductive health issues which they may feel shy to ask or discuss with parents or teachers. This finding is in keeping with evidence from (Nwagwu, 2007); Farmer (2014) & Glik, Massey, Gipson, Dieng, Rideau & Prelip (2014) who explained that certain attributes of the Internet such as affordability, privacy, anonymity and accessibility endear this medium to adolescents. In contrast, Kunnuji (2014) found cyber cafes to be the highest point of Internet access. He however noted that regulations prohibiting the use of cell phones and other mobile devices among the study respondents may be the reason for low phone Internet access.

The finding has grave implications for SLMS's. The school library has metamorphosed to the school library media centre which is supposed to be fully equipped with computers, Internet access and other electronic media resources which enables school-going adolescents to engage meaningfully with a wide range of information resources. If the respondents of this study shy away from utilising Internet facilities at the SLMC it implies that either the facilities are non-existent or that the SLMS has not been effective in creating trust and good rapport with adolescents. Oyewusi (2016) enumerated several threats to school library media centres in Nigeria which include: inadequate funding, poor electricity supply, inability to operate ICT equipment by the school library media specialist and slow Internet connectivity to mention but a few.

Frequency of Internet health information utilisation

The respondents of this study frequently utilised Internet health information on sexually transmitted infections daily and weekly respectively.This was followed by information on sexuality issues and other physiological changes they are experiencing on daily basis. This result is not unexpected cognizant of the fact that majority of the respondents are in mid-adolescence which is characterised by the onset of puberty and rapid physical, emotional and cognitive changes.

Indisputably, this could lead to curiosity and greater interest in their health thus the need to seek and utilise health information from easily accessible and confidential sources like the Internet. Buttressing this finding, Farmer (2014) opined that adolescents have to cope with their developing bodies and health related situations hence the need for accurate and relevant health information. This finding supports the Uses and Gratifications Theory which explains why individuals prefer using certain media to gratify their information needs by identifying motives for media use (Glik et al, 2014). Empirical evidence from several studies (Miller & Bell, 2012;Nolke, Mensing, Kramer & Hornberg, 2015) noted the acceptance and popularity of the Internet as a health information resource for school-going adolescents and affirmed that adolescents regularly utilise Internet health information for very sensitive health information like sexually transmitted infections and sexuality issues.

As the information gate keeper in the schools, the SLMS has the responsibility of making information available in simple language, cognizant of age, literacy level and backgrounds of the adolescents in the school. Lukenbill and Immroth (2009) suggested that school libraries and Librarians can play the role of health information gate-keepers for adolescents in their schools. A fundamental role of the SLMS is to ensure that the health information obtained is understandable and usable. A one-day workshop could be organized which would make a difference in the health information access and evaluation skills of the adolescents. The SLMS must be competent in teaching different information handling skills to students (Oyewusi, 2016). The pivotal role of the SLMS in providing an in-road to health information by promoting information literacy skills cannot be overemphasised.

Purpose of Internet Health Information Utilisation

Study findings indicate that sexuality issues and rapid body changes, followed by diet concerns, body size, shape or physique and STD's are the main purpose of Internet health information utilisation. Information about use and abuse of alcohol and smoking were least utilised by the respondents of this study. This result is not unexpected because respondents are adolescents who are curious about changes taking place in their body due to puberty and growth. This is not peculiar to the respondents in this study; Tsai, Chou, Lin and Lin, (2013) in a questionnaire survey of school going adolescents in Taiwan aged 12-18 found that respondents utilised Internet health information on issues pertaining to body physique diet and health advice for sensitive health issues. Glik et al (2014) in a Senegalese study affirmed that similarto the respondents of this study, Senegalese adolescents utilise Internet for health information they are too shy or embarrassed to discuss with their parents. Similarly, Beck, Richard, Ngugen - Than, Montagni, Perizot and Renahy (2014) emphatically stated that the physiological make-up of adolescent girls predisposes them to retrieving and utilising information on personal and sensitive health issues they may shy away from discussing such as sexuality and reproductive health information, menarche and dysmenorrhea among others.

As health information gate keepers in schools SLMS's have to gain the trust of adolescents in order to guide them on how to evaluate the credibility of the Internet sites they access .It could prevent access to potentially harmful sites and information which may endanger adolescent health. Issues such as gender and culture in the provision of health information could be explored. Oyewusi (2015) suggested that SLMS's could transform SLMC into dynamic, transforming learning environments which provide a welcoming, vibrant and culturally inclusive environment.

Status of the SLMC and Level of Preparedness of the SLMS in Enhancing Internet Health Information Utilisation

It is quite disconcerting to find that of the twelve secondary schools surveyed (6 public and 6 private owned) only 2 (16.67%) had a well- equipped school library media centre which was staffed by a certified school library media specialist as shown in table 4.This indicates a very low level of preparedness to support Internet health information utilisation in Osun State which is worrisome.

The appalling state of school library media centres where they are existent is worrisome and not peculiar to this study. The New JerseyLibrary Association (2016) in reporting key findings of a survey of school districts in New Jersey observed that:20% of high schools have no certified school library media specialist available to students;91 school districts have no school library media specialists and only one SLMS covers 7 schools in one district. In one district, four out of the 12 schools surveyed, SLMC's were non-existent. The students in these schools are left alone to stumble about in today's information society without a guide. Here in Africa as reported by Glik et al (2016) some themes- such as sex and sexuality issues are not discussed openly, hence majority of adolescents go on the Internet to find information.

In the study of Glik et al (2016) one of the adolescents stated, ''sometimes you go on the Internet to search for something on a disease… were given lots of responses but you don't know which one to look at.''This is a reflection of lack of information literacy skill. A SLMS role as outlined by the IFLA/UNESCO school library guideline (2002) as cited in Oyewusi (2015) is expected to instruct in information knowledge and information retrieval skills; assist students in the use of library resources and information skills; answer reference and information enquiries using appropriate materials and analyse the resource and information needs of the school community.Where the SLMC is non-existent or lacks adequate facilities and a SLMS as is the case in this present study, what is the hope of the students in this digital age?.The findings of this study point to the sorry status of SLMC's and their poor level of preparedness to facilitate Internet health information utilisation.Indisputably, there should be greater advocacy for the practice of school media librarianship in Nigeria and beyond to make policy makers see reason not to deprive any school of the services of a certified SLMS and a well- equipped SLMC.

Socio-demographic Profile and Internet Health Information Utilisation by Adolescents in Osun State

Findings show that age and socio-economic class have a positive, significant relationship with Internet health information utilisation. This implies that as age increases, there is increased Internet health information utilisation and adolescents from higher socio-economic background will utilise Internet health information more. The probable explanation for this finding could be that financial constraints limit access and utilisation of Internet facilities. This is particularly important since the majority of the respondents of this study are from the lower socio-economic background and attend the public owned secondary schools. With the cell phones as their main source of Internet access, they may not always have sufficient fund to buy air time for data use on their phones which could impede access to Internet. This finding aligns with the views of Ngugen, Mosadehi and Almario (2017) who in a California-based study found that there remains a persistent demographic and socio-economic digital divide in Internet health information seeking and utilisation. Their study provided empirical evidence that individuals from lower socio-economic backgrounds were less likely to utilise Internet health information. This finding corroborates reports from an Indian study by Naganatini, Rao & Kulkarni (2014); a Senegalese study by Glik et al (2014) and a Ghanaian study by Markwei & Apiah (2016) who affirmed that especially among adolescents in the rural areas from lower socio-economic background, cost and availability of Internet facilities could be inhibitors to Internet health information utilisation.

Although this study found that gender has no significant relationship with Internet health information utilisation, several studies within and outside Nigeria holds a contrary view.Kunnunji (2014) in a study of Internet use among Nigerian adolescents revealed that gender is a strong predictor of Internet health information utilisation. This stance corroborates an earlier study by Pitel, Geckora, Reijneveld, and Van Dijk (2013) which found gender to be a predictor of Internet health information utilisation. Evidence from Rowley, Johnson and Sbaffi (2017) in a US study suggest that being female and younger in age are factors associated with more frequent Internet health informationutilisation which is contrary to the findings of this study. A likely explanation could be that at the developmental stage of the respondents of this study,there may be no gender specific variations in health concerns as both male and female show similar interest in extent of Internet health information utilisation. As conceptualised by Oyewusi (2016), the school library media centre is a learning and information resource for the whole school with a certified SLMS offering equal access, support and encouragement to all students irrespective of age, gender, ability and socio-economic or cultural background. The SLMS therefore has a crucial role to play and should be willing to play the important role of health information gatekeeper by networking with other concerned agencies in promoting and disseminating age-appropriate, gender sensitive health information that is culturally acceptable to Nigerian school-going adolescents. Macintyre and O'Shea (2014) suggested that SLMS could create clear information sheets to help students use sophisticated software.

Implication's for the Practice of School Library Media Specialists

This study and its findings have implications for the practice of school librarianship and policies concerning the establishment of school library media centres in Nigerian schools. Before the approval/establishment of any secondary school, there should be a policy document guiding the minimum criteria for the provision of a school library media centre which must be staffed by a certified school library media specialist. Where there is an already established SLMC without a certified SLMS, the teacher in charge should be retrained.Concerted advocacy should be made by all stake holders for the training and re-training of SLMS for continuing professional development so that they will keep abreast of recent developments in the rapidly changing field of digital literacies and competencies. As a matter of urgency, the provision of Internet facilities should be a priority in all SLMC's. To facilitate the achievement of the lofty goals of a successful school library media programme, SLMS's should be adequately recognised, motivated and given opportunity for career progression then they should be given a free hand to operate so that they can bring innovations and creativity into their practice. The researchers believe that with the implementation of these suggestions, school going adolescents will become more knowledgeable and confident users of Internet health information.

Limitations of the Study

The strength of this study is in the high response rate (98.8%). Due to constraints in time and funding, the study was limited to school-going adolescent in Osun State. The results of the survey were based on self-reported Internet health information utilisation which could have been under reported or over reported.

Conclusion and Recommendations

It can be concluded that the majority of school going adolescents favour mobile phones as access points for Internet health information with the SLMC trailing behind. To a large extent the Internet is accessed regularly to meet health information needs on sensitive health issues adolescents feel shy about discussing thereby gratifying their needs by utilising the Internet for health information. The SLMC's in Osun State are in a very poor state of preparedness to support Internet health information utilisation. The raison d'etre being that school library media centres are virtually non-existent and where they exist, they lack adequate manpower and infrastructure. This situation will certainly not create an enabling environment for Internet health information utilisation for school-going adolescents. Age and socio-economic background had positive significant relationships with Internet health information utilisation which implies that the SLMS in order to be effective must be sensitive to the socio-demographic profile and information needs of the school going adolescents.

From the foregoing, the researchers recommend that:

- School library media centres as a matter of urgency should be established in all secondary schools.
- Certified school library media specialists (SLMS) should be employed to staff the SLMC and be adequately motivated and renumerated to ensure that they give their best.
- SLMS should be given a free hand to develop criteria/guidelines on what to look out for in the provision of age-appropriate and socio-culturally acceptable health information for adolescents.
- SLMS should gain the trust and create rapport with school going adolescents so that they will agree to the use of filtering software and to identify adolescent health interests.
- SLMS should align with cultural and gender expectations to provide developmentally appropriate health information/websites.
- SLMS should offer instruction on information literacy and in collaboration with health educators give instruction on health literacy.

References

American Congress of Obstericians and Gynaecologists (2012) 'Children, adolescents and the media' http://www.acog.org/AnaotAcoG/ACOGDepartments/AdolescentHealthLCUcare/children [accessed on August 16, 2017].

Araoye,M.O. (2004) *Research methodology with statistics for health and social sciences*. Ibadan: Nathadex publishers.

Arulogun, O.S., Ogbu, I.A. & Dipeolu, I.O. (2016) 'Influence of Internet exposure on sexual behaviour of young persons in an urban district of southwest Nigeria' *Pan African Medical Journal.* 25 p 261.

Bamise, O. F., Bamise, C.T. & Adedigba, M.A. (2016) 'Knowledge of HIV/AIDS among secondary school students in Osun State, Nigeria' *Nigeria Journal of Clinical Practice.* 14 pp.338-344

Beck, F.; Richard, J.B.; Ngugen-Ihan, V.; Montagni, I.; Parizot, I. & Renahy, E. (2014) 'Use of the Internet as a health information resource from a nationally representative survey' *Journal of Medical Internet Research.* 16(5) pp. e128.

Borzekowski, D.L, Fobil, J.N. & Asante, K.O. (2006) 'Online access by adolescents in Accra: Ghanaian teens' use of the Internet for health information' *Developmental Psychology.,*42(3) pp. 450-458.

Britt, R.K. & Hatten, N.K. (2013) 'Need for cognition and electronic health literacy and subsequent information seeking behaviours among university undergraduates' journals,sgo.sagepub.com/content/314/2158244013508957[accessed on February 12, 2016].

Farmer, L. (2014) 'Issues in teen technology use to find health information' *Journal of Research on Libraries and Young Adults* . Amazon.co.uk-online[March 23, 2013].

Ghadder, S.F., Valerio, M.A., Garcia, C.M. & Hansen, L. (2012) 'Adolescent health literacy: the importance of credible sources for online health information' *Journal of school health*. 82(1) pp. 28-36.

Glik, D., Massey, P., Gip Son, J., Dieng, T., Rideau, A. & Prelip, M. (2014) 'Health-related media use among youth audiences in Senegal' *Health Promotion International*. 31 (1) pp. 73-82.

Hargittai, E. (2010) 'Digital natives? Variations in Internet skills and use among members of the Net Generation?' *Social Inquiry* . 80(1) pp. 92-113.

Helsper, E. J. (2010) 'Gendered Internet use across generations and life stages' *Communications Research.* 20 (10) pp. 1 – 23.

Kunnunji, M.O.N. (2014) 'Adolescence, young adulthood and Internet use in Nigeria: a review of what is known and unknown' *International Journal of Economy, Management and Social Sciences.* 3 (1) pp.11-17.

Levin-Zamir, D., Lemish, D. & Gofin, R. (2011) 'Media health literacy MHL: development and measurement of the concept among adolescents' *Health Education.* 26(2) pp. 323-335.

Lukenbill, B. & Immroth, B. (2009) 'School and public youth librarians as health information gatekeepers: research from the lower Rio Grande Valley of Texas' *School Library Media Research.* 12 pp.1-30.

Macintyre, S. & O'Shea, C. (2014) 'The learning commons in your school library: why you should create a user-centred learning space' https://lbrary.concordia.ca/about/staff/forum/Macintyre-Poster.potf [accessed on March 23, 2017].

Markwei, E.D. & Appiah, D. (2016) 'The Impact of social media on Ghanaian youth: a case study of the Nima and Maamobi communities in Accra, Ghana' *The Journal of Research on Libraries and Young Adults* . 7 (2) pp. 1-24.

Miller, L.M.S. & Bell, R.A. (2012) 'Online health information seeking: the influence of age, information trustworthiness and search challenges' *Journal of Aging Health*. 24 (3) pp. 525-541.

Naganandini, S., Rao, R. & Kulkarni, S. (2014) 'Survey on the use of the Internet as a source of oral health information among dental patients in Bangalore city India' *Oral Health Prev. Dent.* 12(2) pp. 141-147.

New Jersey Library Association (2016) 'Fact Sheet: public libraries and school libraries' http://www.njla.org [accessed September 12, 2017].

New Zealand National Library (2015) 'Modern Library learning environments' http://schools.natlib.govt.nz/school-libraries/spaces-and-places/modern-library-learning-environment [accessed March 21,2017].

Niemla, R., Ek, S., Eriksson-Backa, K. & Huotari, M.L. (2012) 'A screening tool for contemporary health education and communication strategies in the 21st century' *Health Promotion International.*15 pp.259-267.

Nwagwu, W.E. (2007) 'The Internet as a source of reproductive health information among adolescent girls in an urban city in Nigeria' *BMC Public Health*.7 pp.354.

Oyedeji, G.A.(1985) 'Socio-economic and cultural background of hospitalised children in Ilesha' *Nigerian Journal of Paediatrics.* 12(4) pp.111-117.

Oyewusi, F.O. (2015) 'Changing the school library learning spaces in Nigeria: myth or reality' *Nigerian School Library Journal.* 14 pp.1-6.

Oyewusi, F.O. (2016) *Understanding school library media concepts*. Ibadan, Nigeria: Stirling-Horden publishers.

Pitel, L., Geckova, A.M. Reijneveld, S.A. & van Dijk, J.P. (2013) 'Socio-economic differences in adolescent health-related behaviour differ by gender' *Journal of Epidemiology* .23 (3) pp. 211-218.

Rowley, J., Johnson, F. & Sbaffi L. (2017) 'Gender as an influencer of online health information seeking and evaluation behaviour' *Journal of the Association for Information Science and Technology*. 68 (11) pp. 36-47.

Tsai, M. C., Chou, Y. Y., S.J. & Lin, S.H. (2013) 'Factors associated with adolescents perspectives on health needs and preference for health information sources in Taiwan' *Arch Dis Child.* 98 (1) pp 9-15.

Ybarra, M.L., Kiwanuka, J., Emenyonu, D. & Bangsberg, D.R. (2006) 'Internet use among Ugandan adolescents: implications for HIV intervention' *PLOS Medicine*. 3(11) pp. c433.

REACHING OUT TO CONSUMER HEALTH INFORMATION USERS THROUGH ACADEMIC AND PUBLIC/COMMUNITY LIBRARIES PARTNERSHIP: EXPERIENCE FROM KENYA

Nancy Kamau
Acting University Librarian
Kenya Methodist University

and

Paul Gichohi
Acting Deputy University Librarian
Kenya Methodist University

Abstract

Consumer health information has gained prominence worldwide due to the need for preventive as opposed to curative healthcare. Availability of diverse online consumer health information (CHI) sources necessitates that public library users become aware of quality CHI sources as they make important healthcare decisions. An academic library received a grant for a project on the promotion of consumer health literacy through public and community libraries in Central and Upper Eastern Kenya. The first phase of the project carried out a CHI resources training and provided seed money to two public libraries to acquire consumer health books. The second phase of the project forms the basis of this paper aimed to examine the impact of the first phase by evaluating the application of the information literacy skills gained during the training and by assessing the use of the consumer health collection by the public. A qualitative approach and survey design were used. Data was collected from twelve users and nine librarians who were purposely selected for a Focused Group Interview (FGI). An observation guide was also used during physical visits on selected public and community libraries. The results show that many public/community libraries established health corners/hub after attending the training. There was an increase in queries and demand for e-resources on diseases and general lifestyle information, a change of attitude by staff and users towards CHI, improved customer care services, and heightened image and value of a librarian in the provision of CHI. Challenges faced included semi-illiteracy among the public, users' insufficient time to visit libraries, inadequate training skills and knowledge among library staff, and insufficient funding. The paper concludes that partnership between academic and public/community libraries in reaching out consumer health information users was inevitable and significant in fostering community health development.

Keywords: *Consumer health information; health information resources; academic-public libraries partnership*

Introduction

Consumer Health Information (CHI) is described as information that is not technical and is easily understood by the public for making informed health-related decisions. Consumer health information has gained prominence all over the world due to the need for preventive as opposed to curative healthcare. The increased demand for consumer health information calls for easy to use and access to consumer information resources and services. Smith, Hundal and Keselman (2014) found that the public seek for consumer health information from public libraries and that the public library and the librarians are a trusted source for consumer health information. However, most African countries lack the needed resources, funding, systems and structures that support the delivery of health information to the public. Public libraries in Kenya lack well-structured and systematic mechanisms for supporting the public with unprecedented consumer health information (Kamau, Gichohi & Wanjohi, 2015). The available literature provides little information on localized frameworks and approaches for fostering effective provision and access to consumer health information.

To fulfill the above mandate to the community, public libraries should partner with the community and other stakeholders (Kouame, Harris & Murray, 2005). According to Kouame, Harris and Murray, this would facilitate better understanding of the community health information needs and the nature of information resources that are preferred. The study by Yun, Adiputra, and Yang (2013), and Yi and You (2014) identified the inadequacy of public libraries in meeting all the consumer health information needs of the public, hence the need for collaboration with other organisations or institutions. Urban Libraries Council (2007), and Mugwisi, Mostert and Salman (2013) noted that most public libraries were not self-sufficient and hence were partnering and collaborating with other stakeholders in undertaking activities that would have been very difficult to implement alone. Wilson and Train (2005), and White (2009) underscored cooperation, collaborations and partnerships in adding value in information and knowledge sharing.

One of the key partner and collaborator in this endeavours are the academic libraries. The case of North Colorado reported by Feldmann (2014) described how public libraries were collaborating with academic libraries in providing resources and services to the local community. In Michigan, librarians from academic libraries and public libraries have collaborated in carrying out joint research to provide information and knowledge that is beneficial to the local communities (Preddie, 2013). Preddie outlined areas of collaborations that included providing expertise in collection development, training of trainers to enable public library librarians to train the community on how to use library resources, and developing and maintaining websites that can be accessed by the public. The cooperative capacity building between academic and public libraries can also be borrowed from the University of Alabama that runs an outreach programme in collaboration with Alabama Entrepreneurial Research Network (AERN) to support small business development in South Alabama (Pike, Chapman, Brothers & Hines 2010).

Experiential description of collaborations in the provision of consumer health information in Kenya

Consumer health information project was funded by Elsevier Foundation and implemented in seven African countries (Kenya, Mali, Mozambique, Nigeria, Zambia, Zimbabwe and Uganda) within a period of two years. The main purpose of the project was to promote consumer health information (CHI) through public and community libraries. In Kenya, the project was implemented by the Kenya Methodist University in collaborations with public and community libraries in Central and Upper Eastern Kenya. This paper shares the experience from Kenya.

In Kenya, the project activities were implemented in two phases. The first activity in phase one was needs assessment for the targeted libraries. The needs assessment revealed that public and community libraries provide consumer health information services, with print as the most popular resource. Information on wellness, healthy living and diseases such as HIV/AIDS was also being sought by the public. The effective provision of consumer health information service was largely hindered by the lack of health information literacy skills among library staff, inadequate consumer health information resources and poor facilities (Kamau, Gichohi & Wanjohi, 2015). The assessment was very instrumental in informing the design of the second project activity, that is, a consumer health information resources training workshop. This training workshop involved fifteen librarians from public and community libraries who were drawn from seven counties representing central and upper eastern region of the country. The third activity was the provision of seed money to two selected public libraries to help purchase consumer health books.

The first activity for phase two of the project was site visits to a sample of the libraries that had been represented in the training and a visit to the two libraries that had received the seed money. The second activity was to have two focus group discussions meetings, first with a sample of the librarians that attended the training, and second with a sample of public library users who had used the consumer health information resources from the targeted libraries.

It is expedient to note that, the second phase of the project formed the basis of this paper. The main objective was to examine the impact of the first phase. The specific objectives were to evaluate the application of information literacy skills in the provision of consumer health information services at public/community libraries and to assess the use of the consumer health collection by the public.

Methodology

This paper presents results of the collaborative efforts by an academic library (Kenya Methodist University) and public/community libraries in reaching out to consumer health information users in Central and Upper Eastern Region in Kenya which took place from August 2015 to May 2017. A qualitative approach and survey design were used. Fifteen participants who were practicing librarians from thirteen public/community libraries (Mikumbune, Meru, Isiolo, Timau, Karatina, Chinga, Nyeri, Muranga, Thika, Embu, Munyu, Laikipia and Kangema) spread across seven counties (Meru, Nyeri, Embu, Kiambu, Murang'a, Isiolo and Laikipia) took part in the initial training. Out of these, ten librarians who were drawn from eight public/community libraries spread across the seven counties participated in the focus group discussions.

An observation guide was also used during the physical site visits to six selected public and community libraries (Kangema Community Library, Nyeri Public Library, Meru Public Library, Isiolo Public Library, Laikipia Public Library and Timau Community Library) from five counties (Meru, Nyeri, Embu, Kiambu, Murang'a, Isiolo and Laikipia). The criteria used for the libraries to be visited included their geographical location and type of the library. The physical visits were done by two evaluators who were involved in the planning and implementation of phase one of the project. The two evaluators sought appointment with the concerned heads of the libraries before the actual visit.

Data for Focused Group Interview (FGI) was collected from the ten librarians and twelve users who were purposely selected. A focus group interview was held first with librarians from public and community libraries, and second with users of consumer health information at public and community libraries. Participants for the focus group with public library users were identified by the librarians as those users that were keenly using the consumer health information resources. Participants were facilitated to travel to each venue for the interview and also provided with lunch. The focus group discussion for the two groups took on average one hour and was organized around different questions to which participants were expected to respond to. The principal investigators assisted by two research assistants used digital sound recorders in recording the discussion. Focus group discussion was particularly essential in assessing knowledge and experiences that staff and users had in the provision of consumer health information. The findings were analyzed thematically and consolidated as discussed below.

Results and Discussions

The results of this paper were analyzed and discussed in accordance with the two main objectives as presented below.

Application of information literacy skills in the provision of consumer health information services at public/community libraries

The project team was interested in assessing the application of information searching skills in the provision of consumer health information services at public and community libraries. This was realized by physical site visits to the selected libraries.

Establishment of consumer health corner

The visits revealed that all the libraries had established a CHI reading corner/hub/center, some with a good sizeable collection and others with a few books. The collection in the health section was well arranged using Dewey Decimal Classification (DDC) and had been solicited largely through donations and others through purchase via Kenya National Library Service (KNLS) head office.

Five out of six libraries had their CHI health collection shelved separately and adjacent to the designated reading health center. One important factor observed was that librarians had assessed their entire collection and came up with books related to consumer health. All these books were removed from their initial locations and put together in designated shelves which were referred to as consumer health collection corner. The pulling of all relevant consumer health books showed the commitment of the library staff in making the consumer health information corner functional and useful. This went a long way in boosting utilization of the consumer health collection, a fact that was positively observed by users. The practices found in most of these libraries validated what Norman (1999) had recommended in an empirical study. Norman emphasized on the need to physically separate different types of health information materials in the library to increase access, availability and utilization of the same.

Some of the books were found to be very technical and were therefore being borrowed by health sciences students whereas others were found to be at the level of the ordinary consumer, and were hence being borrowed by the general public. Although most of the health corners had less current books, it was a positive response in that the awareness of setting aside health information materials was not there before the training as was reported by all librarians who were in charge of the libraries that were visited.

Training of library staff and users on CHI

Most of the librarians indicated that they had trained staff and users on accessing CHI on one to one basis depending on the needed information particularly by users while in other cases, groups training were conducted. Nevertheless, a common observation was that all the libraries that were visited had not kept usage or training statistics. This posed difficulties in determining actual profiles of users and their information needs. The effort done by staff also lacked quantifiable data for assessing the effectiveness of the training. The user profiles are significant in pointing out the near accurate information needs of a public library user (Gichohi, Bosire & Dulle, 2016).

Facilities

Evaluators observed that most of the libraries had adequate facilities such as Internet and Wifi as well as computer rooms where users access electronic-based information sources. One of the libraries had kindles that were loaded with various types of books. The kindle had a facility that enables the user to access the Internet.

Collaboration and partnership in community outreach

Four out of six visited libraries were found to have gone out of their way in seeking collaborations with other stakeholders such as the medical training institutes and hospitals, some of which were making presentations on health topics such as diabetes to a library audience. One of the libraries was found to have established cordial interactions with teenagers on health topics such as HIV/AIDS. During the day of the field visit at this particular library, there was a health talk on HIV/AIDS and the evaluator took a chance to talk to the teenagers on the teen's health online information sources. The teenagers were found inquisitive with numerous questions on sexual health matters. The community library librarian was also found to be repackaging health information that was aimed at specific audiences. Another library described how it partnered with senior citizens club and other stakeholders where helpful consumer health information was being shared periodically. According to the head librarian, the senior citizens were introduced to existing youth club who were mainly tree planters and herbalists. This provided youth the opportunity to learn various medicinal plants which are essentially used to cure skin diseases. These kinds of collaborations and partnerships were critical in elevating the perception of public and community libraries as partners in solving issues affecting the societies; a proposition which is supported by Feldmann (2014) and Preddie (2013).

Assessment on the use of consumer health information by the public

The project team was interested in examining the utilization of consumer health collection and the further assessing the impacts of the information literacy skills on the public at selected libraries. Two focus group interviews were conducted, first with librarians and second with users of public and community libraries. The lead questions of the focus groups covered different areas including the gains, challenges and improvements in the provision of consumer health information. Responses from both groups were harnessed under common themes as discussed below.

Nature and status of consumer health information provision in public and community libraries before and after the training on consumer health information

Librarians were asked to discuss the nature and status of the provision of consumer health information in their respective libraries before and after the training. Participants noted that prior the training, there was poor awareness on the availability and accessibility of consumer health information via public and community libraries. The low awareness could largely explain the minimal utilization of these resources by the public. This finding agrees with Bielavitz, Wisdom and Pollack (2011) who also linked public awareness programs to the utilization of consumer health information.

The participants further noted that there was an increase in queries and demand from the public for e-resources on diseases and general lifestyle. Also noted were the change of attitudes by staff and users towards CHI, improved customer care services at public/community libraries which culminated to heightened image and value of a librarian in the provision of CHI. Participants noted that the knowledge gained from the training workshop did not only help in increasing the awareness but also enabled objective sensitization of both staff and users on availability and value of consumer health information as exclaimed by participant (D):

> *Before the training, I only responded to what the client asked or requested for because I did not have any other information to offer. Furthermore, most of our clients could not access simple health information since basic information materials were not available, for example, materials on managing hypertension.*

Heavily used consumer health information resources after the training

Information gathered from staff participants showed that the most sought online consumer health information source included cancer net, MedlinePlus, women's health, teen's health and nutrition related information. Communities around Isiolo library were particularly cited to have been greatly interested in women's health resources. This was largely because, culturally, women in the nearby communities don't practice family planning and hence the more concerns on their own health and that of their children.

On their part, most public library users' participants indicated that they were mainly accessing the printed health information in the library which included information materials on human nutrition, healthy living, breast cancer, and general lifestyle, information on drugs and substances abuse, and general information on women's health. This underscores the purposes for the provision of CHI as noted by Deering and Harris (1996). Although most users were biased to print sources, they said that the presence of internet access at public and community libraries was critical in facilitating availability and accessibility of consumer health information. Yi and You (2014) have described the diverse formats of CHI with biasness to online resources. This point out the need to equip public and community libraries with quality, updated and relevant consumer health information sources (Kamau, Gichohi & Wanjohi, 2015) in order to adequately satisfy the needs of the public.

When users were asked to discuss how often they sought for CHI, their responses indicated that the majority accessed the health information when the need arose, especially if they required knowing something. One participant indicated they accessed the information when they had free time. Another one indicated his frequency of use as monthly while another one indicated about twice a month**.** All others had no defined period but mainly, their access was driven by need which largely agrees with the findings of Bielavitz et al, (2011) who emphasized the need as the public's driving factor for seeking and using CHI .

Of the accessed CHI sources, public library users pointed out several benefits accrued from the use of CHI which were also shared with family members and friends. Examples of the benefits included: acquisition of additional knowledge on topics such as stress management, healthy foods, dimensions of exercise, ageing challenges, application of natural remedies to counter some ailments, and behavior change in different areas, such as the eating habits. The public/community library users' participants could not at the time of the interview come up with any consumer health information needs which had not been met by their library. From the discussion, it was clear that the provision and accessibility of CHI at public and community libraries was taking shape.

Impact of the training on the provision and access of CHI at public and community libraries

Public and Community library participants were asked to describe how each had put to use the skills which they gained earlier during the consumer health information resources training. One thing that stood out across all participants was that, the staffs who had earlier been trained on CHI utilized their knowledge by training their fellow staffs first, and second, they trained public and community library users. One librarian explained how their library incorporated the training on consumer health in the normal library orientation and user education programme. Notably, the training equipped the staff with knowledge of the different websites they could access information on consumer health. Participants noted that the trained staff got essentially empowered and were able to guide users to specific online databases. One staff participant (B) indicated that:

> *The training has been very useful to us unlike before when we used to do interlibrary loaning. We can now guide our users on where to get specific information online.*

The adoption of staff and user training at public and community libraries was noble and a valuable engagement in literacy development. Kanyengo, Ajuwon, Kamau, Horta and Anne (2011) termed the lack of basic information retrieval skills as a serious drawback for staff in Africa. According to Yi and You (2014), such training strengthens staff knowledge and role as healthcare information providers. A sentiments that was also echoed by Linnan, Wildemuth, Gollop, Hull, Silbajoris and Monnig (2004).

Participants were further asked to share their experiences on how the training had impacted on consumer health information provision in their libraries. From the discussion, it was clear that staff of public and community libraries became increasingly aware of consumer health information sources and exhibited confidence when serving users who approached them with diverse queries. Some users took practical steps in improving their lives and that of the society. For example, participant (F) noted, *"one staff member read a book and subsequently planted a medicinal plant; the cactus plant whose milk-like liquid is used to treat wounds".* Participant (F) further reported that the surrounding communities were sensitized on health living and eating habits which led to observable general cleanliness among members of the public who frequented the community library for information services. Participant (G) reported, *"We now see a notable number of users who visit the public library seeking information on illnesses before seeing a doctor for treatment."* This sentiment largely agrees with the finding of Fox and Duggan (2013) who reported the emerging trends in the use of the internet by public as a diagnostic tool. The public library users who had been trained were therefore grateful of the training and acknowledged its relevance in changing their lives.

The overall benefit of the training to staff and the patrons of public and community libraries

Participants were asked to describe the overall benefits of the training on fellow staff and the general public to which they said that there has been increased general awareness and usage of consumer health information materials at public and community libraries. Users said that the training was significant noting its relevance in saving time in information searching and retrieval. Staffs from public and community libraries were reported to have mastered the skills and gained the confidence in delivering consumer health information services to the public. Staff participant (B) indicated that the training offered an opportunity for enhanced information literacy noting that they can now locate specific and relevant information with ease. Participant (C) indicated,

> "*For me, the training created a renewed interest towards consumer health information and its provision to users.*

All participants noted that the initiative had made their libraries to be perceived as contributors to the development of a healthy nation. The findings concurs with Smith and Duman (2009) who reported the significance of holistic provision of CHI in public libraries noting the heightened identity of health information librarians and their contributions in community development. Flaherty (2013) also noted that the provision of CHI in public and community libraries further solidifies the trust and expectations that users have on a public library. Other notable impacts of CHI on publics were reported by Pifalo, Hollander, Henderson, DeSalvo and Gill (1997) with far reaching implications on lifestyle changes, communication and the nature of health care decisions made by doctors and other healthcare professionals.

Challenges faced in the implementation of the skills gained during the training

The evaluators sought to understand the challenges encountered in the implementation of the skills gained during the training as well as other difficulties experienced in the provision of consumer health information. The public and community librarians' discussion noted that the communities who use public and community libraries are usually challenged by distance and their occupation resulting to less or no time to visit libraries. All participants highlighted the insufficient print consumer health information resources which according to librarians were attributed to the shortages of finance. Also noted were language barriers and semi-illiteracy among the public library users and inadequate training skills and knowledge among library staff. Other challenges noted were:

- High demand for access of online resources which was outstretching the few computers available in the library for public use.
- High poverty levels among local communities hence some users from some regions were reported to have had expectations for monetary appreciation after attending library training on CHI.
- Poor internet connectivity due to limited ICT infrastructural development in some regions.
- Inadequate staffing. This was noted across all public and community libraries, for example, participant (A) noted "*For us currently, we have*

no system librarian who can manage our e-resources section and assist clients."

- Few computers – a common problem that was noted across all public and community libraries. This had implications on the utilization of online health information resources.
- The attitude and perception of the general public that public and community libraries are not places to seek for health information while others perceive librarian as incompetent in providing health related information – a scenario that hinders the level of assistance the librarian can offer.

The findings point out a low level of preparedness of public and community libraries in providing CHI. Other challenges were attributed to users' shortcomings. Previous studies such as Yun, Adiputra, and Yang (2013); Kouame et al. (2005), and Yi and You (2014) had also noted the unpreparedness of public libraries which largely effected the provision of CHI. These studies recommended sufficient budget for collection development, infrastructure, facilities and staff in order to scale down the challenges. In addition to resources, the effective provision of CHI also requires deliberate commitment by leadership in championing change that would revolutionize the provision of CHI to the public at public and community libraries.

Suggestions on the provision of consumer health information at public and community libraries

When asked to point out additional information which would be significant in the effective provision of consumer health information at public and community libraries, librarians and users participants noted a number of initiatives that cut across general practices, policies and value addition activities. The major ones are summarized below.

- Need to increase budget for acquisition of consumer health information materials at public and community libraries.
- Need to strengthen networks for sharing key databases and other healthy related information with other libraries.
- Need for continuous training of librarians on CHI. Participants also recommended need for regular meetings and forums for sharing experiences and challenges amongst librarians from public and community libraries on the provision of CHI.
- Need for frequent users' training: this would enable users to easily access and retrieve relevant information resources especially the online health resources.
- Participants underscored the need to promote health information materials in public and community libraries through different media, for example, posters, flyers, electronic banners, and on library noticeboards among others.

- Need for public and community libraries to provide referral services to users on where else to get particular services and health related information.
- Need for public and community libraries to repackage consumer health information with reference to local users' needs or particular users.
- Need for public and community libraries to provide links to helpful online sources via KNLS website or pin the list of such databases and online sites at a conspicuous point in the digital library section.

Conclusions and Recommendations

The paper concludes that the collaboration and partnership of academic and public/community libraries in reaching out the public was inevitable and significant in enhancing the awareness, utilization and value of the consumer health information. The training on CHI enabled the acquisition of new literacy skills and knowledge in the provision and access of consumer health information. Impacts of the training were enormous and trickled down to the public. Librarians managed to set up a separate section for consumer health collection in their libraries. This initiative played a significant role in arousing the interests of users on these materials and hence should be enlarged to meet the varied needs of all the library users. This can be done by increasing the library budget for collection development and by liaising with some of the organizations that deal with health matters and are able to offer donations to the public and libraries. The study also recommends aggressive awareness and promotional activities of such sources.

Implication on Policies and Practices

The study has significant implications on the nature of collection and mechanisms of providing information services on consumer health at public and community libraries. The KNLS Board should endeavor to improve the consumer health information resources in the libraries. It should also enact mechanisms for training for other public and community librarians from other regions in the country that were not covered in the scope of this project. The public and community libraries should come up with strategies and policies on reaching out to the surrounding community both users and partners in making access and use of consumer health information successful.

References

Bielavitz, S. Wisdom, J., & Pollack, D. A. (2011). Effective Mental Health Consumer Education: A Preliminary Exploration. *The Journal of Behavioral Health Services & Research*, *38* (1), 105–113. Retrieved from doi.org/10.1007/s11414-010-9213-z [accessed 28 October 2015].

Deering, M. J. & Harris, J. (1996). Consumer health information demand and delivery: implications for libraries. *Bull Medical Librarianship Association, 84* (2), 209-216.

Feldmann, L.M. (2014). Academic Business Librarians' Assistance to Community Entrepreneurs. *Reference Services Review 42*(1), 108–128. doi: 10.1108/RSR-04-2013-0021.

Flaherty, M. G. (2013). *The Public Library as Health Information Resource*. Syracuse University, The School of Information Studies- Dissertations. Paper 82. Retrieved from http://surface.syr.edu/cgi/viewcontent.cgi?article=1081&context=it_etd [accessed 31 October 2015].

Fox, S. & Duggan, M. (2013). *Health Online 2013, Pew Research Center's Internet & American Life Project*. Retrieved from http://pewinternet.org/Reports/2013/Health-online.aspx) [accessed 28 October 2015].

Gichohi, P. M. Bosire, O.B. & Dulle, F.W. (2016). How Public Libraries in Meru County, Kenya address the Information Needs of Small Enterprises. *Information Development Journal*, *34*(4), 1-18. doi.org/10.1177/0266666916667998

Kamau, N., Gichohi, P. M. & Wanjohi, R. (2015). Consumer Health Information Provision in Public and Community Libraries in Central and Eastern Kenya. *The Maktaba: A Journal of the Kenya Library Association, 4*(3), 10-19.

Kanyengo, W. C., Ajuwon, G. A., Kamau N., Horta, C. & Abdrahamane A. (2011). Knowledge and Utilization of the United States National Library of Medicine's Biomedical Information Products and Services among African Health Sciences Librarians. *Journal of Medical Reference Services Quarterly, 30* (3), *257-268*.

Kouame, G., Harris, M. & Murray, S (2005). Consumer Health Information from Both Sides of the Reference Desk. *Library Trends, 53*(3), 464–479.

Kouame, G., Harris, M. & Murray, S (2005). Consumer Health Information from Both Sides of the Reference Desk. *Library Trends, 53* (3), 464–479.

Linnan, L. A., Wildemuth, B. M., Gollop, C., Hull, P., Silbajoris, C., & Monnig, R. (2004). Public Librarians as a Resource for Promoting Health: Results from the Health for Everyone in Libraries Project (HELP) Librarian Survey. *Health Promotion Practice, 5* (2), 182–190. doi.org/10.1177/1524839903258018

Mugwisi, T., Mostert, B. & Salman, A. (2013). Transforming the Dialogue with our Customers: the Evolution of our Marketing Plan. In *Libraries in Dialogue for Transformation and Innovation*. Cape Town. Retrieved from http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CCMQFjAA&url=http%3A%2F%2Fconferences.sun.ac.za%2Findex.php%2Fliasa%2Fliasa-2013%2Fpaper%2Fdownload%2F1260%2F377&ei=Fxh3VaDXJKH17AblooEI&usg=AFQjCNHbGl-CUijUoZhp23DH9smRKZK5Mg&sig2=4zh9d8WQKgJSr-gIVjr_Qw. [accessed 28 January 2011].

Norman, M. (1999). Out on loan: a survey of the use and information needs of users of the Lesbian, Gay and Bisexual Collection of Brighton and Hove Libraries. *Journal of Librarianship and Information Science*, *31* (4), 188–196.

Pifalo, V., S. Hollander, C. L. Henderson, P. DeSalvo, & Gill, G.P. (1997). The impact of consumer health information provided by libraries: The Delaware experience. *Bulletin of the Medical Library Association, 85* (1), 16–22.

Pike, L., Chapman, K., Brothers, P. & Hines, T. (2010). Library Outreach to the Alabama Black Belt: The Alabama Entrepreneurial Research Network. *Journal of Business & Finance Librarianship, 15*(3-4), 197–207. doi: 10.1080/08963568.2010.487690.

Preddie, M.I. (2009). Canadian Public Library Users are Unaware of Their Information Literacy Deficiencies as Related to Internet Use and Public Libraries are challenged to Address These Needs. *Evidence Based Library and Information Practice, 4*(4), 58–62. Retrieved from http://ejournals.library.ualberta.ca/index.php/EBLIP/article/view/6614 [accessed 14 November 2017].

Smith, C. A., Hundal, S., & Keselman, A. (2014). Knowledge Gaps Among Public Librarians Seeking Vaccination Information: A Qualitative Study. *Journal of Consumer Health on the Internet*, *18*(1), 44–66.

Smith, S., & Duman, M. (2009). The state of consumer health information: an overview. *Health Information & Libraries Journal*, *26* (4), 260–278. doi.org/10.1111/j.1471-1842.2009.00870.x

White, M. 2009. Challenges Encountered by Public Libraries in the Provision of Community Information in Botswana. In *Information Services and Community Development* at University of Botswana Library Auditorium, Gaborone: University of Botswana Library. Retrieved from: http://www.bla.org.bw/download/BLA%202nd%20National%20Conference.pdf [accessed 14 November 2017].

Wilson, K. & Train, B. (2005). The Future of Business Information Services and Schools Library Services. *MLA North West: Public Libraries Joint Commissioning Research Centre for the Public Library and Information in Society (CPLIS) University of Sheffield*. Retrieved from https://www.shef.ac.uk/polopoly_fs/1.128107!/file/CPLIS---The-Future-of-Business-Information-Services.pdfv [accessed 14 November 2017].

Yi, Y. J., & You, S. (2014). Understanding the librarian/user gap in perception of health information services: A phenomenographic approach. *Journal of Librarianship and Information Science,* (1-12). doi.org/10.1177/0961000614532861

Yun, C., Adiputra, K. D., & Yang, L. D. (2013). Public Librarian's Readiness in Providing Health Related Information. *Qualitative and Quantitative Methods in Libraries (QQML)*, *1*(1), 79–86.

Acknowledgement

To Elsevier Foundation for funding the project that enabled the outreach activities. Also acknowledged is the support accorded by Kenya Methodist University Management, Kenya National Library Service, research assistants and all participants.

KNOWLEDGE MANAGEMENT AND INNOVATION

SHAPING LIBRARY AND INFORMATION SERVICES DELIVERY THROUGH INNOVATION AND TECHNOLOGY AT THE UNIVERSITY OF ZAMBIA

Pailet Chewe
Acquisitions Librarian
University of Zambia Library

and
Eness M. Chitumbo
Serials Librarian
University of Zambia Library

Abstract

Information and Communications Technology has brought about a paradigm shift in the way library services are being delivered. The digital revolution motivated by technology innovation has transformed academic libraries. Technology has impacted on every sphere of academic library activity such as acquisition, organisation, storage, retrieval and delivery of information both in print and digital formats. Academic libraries support the core business (teaching, learning and research activities) of the parent institutions. Therefore the need for these institutions to innovate becomes imperative. This study attempts to highlight innovative library services (e.g. subscription to online resources, open access institutional repository, dynamic website, information literacy programs, etc.) that have been successfully adopted at the University of Zambia with the aim of investigating staff perceptions toward technology based innovation. Using a qualitative research design, interviews were conducted with six (6) key informants between June and August, 2017. The 6 librarians were purposively sampled from a population of 55 librarians working in the University of Zambia Library. It was established that innovation was crucial if the library was to be relevant in this era, hence the need for all stakeholders to develop realistic strategies that would keep the library afloat in this age and beyond. The findings of this study will inform stakeholders on how best to align service delivery for the benefit of the user community. The paper concludes by noting some barriers to innovation and proposes areas for enhancement.

Keywords: *Innovation, Innovative Library services, ICT environment, University of Zambia Library*

Introduction

Technology has the ability to completely change the way in which industries operate. Libraries are not immune to the effects that emerging innovations and technology can have on the services they provide to patrons. Walter and Lankes (2015) opines that innovation in academic libraries should be broadly defined to include changes in existing library service programs according to the changing needs of users, new service programs that are enabled by new digital technologies and new services that support new paradigms of teaching and research. Islam, Agarwal and Ikeda (2015) argue that for the academic library to remain relevant to its users, it must redefine its role and innovate to create responsive and convenient services. Therefore, the need to bring information to various users has encouraged the creation of many innovative services linking new technology with traditional library information services. The emergence of digital technologies and information and communications technology (ICT) tools in libraries has encouraged the implementation of a wide range of applications and services such as digital libraries, the use of social media tools, dynamic websites in order to make services visible, embedding electronic resources into e-learning platforms, etc. In the changing information environment, technological advances, changing customers and needs, intensified competition and changing business environment have been the dominant drivers (Basahuwa, 2017).

Bearing that in mind, the University of Zambia Library (UNZA Library) has been actively implementing the innovation –driven library and information service delivery approach, transforming and upgrading traditional services to modern services. The aim of this paper is to highlight the innovative services and approaches that librarians at the University of Zambia (UNZA) have successfully introduced to meet the ever changing needs of library users.

Background

Established in 1969, UNZA Library is the oldest and biggest academic library in Zambia, boasting of five (5) divisions/departments within the library and 3 branch libraries. All the divisions and branch libraries are headed by professional librarians with the competence to pioneer technologically related innovations within their libraries. It is through their innovative efforts that the UNZA Library derives its fame as the leading academic library in Zambia. It is worth noting that not so long ago library services at UNZA were predominantly traditional. Today, the case is different owing to the advent of library based technologies coupled with the ingenuity of the new crop of librarians. UNZA

Library first automated its services in 1996 and since then, the institution has not looked back.

Problem statement

The importance of service innovation in an academic library environment cannot be overemphasized. Consequently, there is need for librarians to move with the current trend in society not only to innovate library and information services, but to consolidate and sustain the already implemented innovative services and practices. Since 1996 when UNZA Library successfully implemented its first technological innovation (the Integrated Library Management System) and later followed by other innovative information services, no study to date has investigated librarians' perceptions of innovations at UNZA. This study therefore aims to fill this gap.

Objectives of the study

The main objective of this paper was to investigate assess librarians' perspectives on innovation and the factors militating against its development. Strategies to drive innovative library service delivery to new heights are highlighted. This study was guided by the following specific objectives:

1. To ascertain the importance of innovation to UNZA Library
2. To find out the types of innovative services that UNZA Library provides to its users
3. To investigate the barriers to effective innovative service delivery
4. To suggest novel innovative library services

Literature review

The mass of innovation literature has focused on the for-profit and manufacturing sectors. Relatively few studies of innovation in academic libraries exist. For instance, Musangi (2015) observe that 21st century academic libraries have witnessed a lot of technological changes, which cannot be ignored. Reference librarians in academic libraries cannot stay static or traditional in their services or outreach to users, they need to harness technology and its capabilities in order to provide the information and literacy skills needed today by the 'net-gen' generation of users. The library users of today in the academic libraries coupled with the advancement of technology has changed the physical makeup of libraries and their functions and, thus, has made an impact on the way information is delivered, as libraries strive to redefine their services in order to meet users' needs and expectations.

In a related discourse, Musangi (2015) observes that traditional models of libraries offering information services are not working for current generation of students. The current generation of library users can be termed as 'digital natives'. These digital natives have grown up in an environment surrounded by rapidly evolving technologies. This means that today's academic library users think about technology and information differently than previous generations, and expect instant access to information. With this kind of environment and expectations, academic libraries need to evolve by changing to offer user-oriented services and following users into their social spaces by allowing users to participate in the creation of content, keeping the users constantly updated and building services based on their feedback. To achieve this, libraries need to incorporate web 2.0 tools in the way they provide services.

A research by Kaur and Sharda (2010) elaborates on how technological innovations have led to the improved information management and library services. Information technology and Information Communication Technology have changed the information seeking behavior of the users and services being provided by the librarians. In spite of some problems in using e-resources almost every user need e-resources in one or the other form. This information explosion, increasing needs of users, lack of self sufficiency and financial crunch has led to the formation of consortia all over the world.
A study by Anyira (2011) explored the librarian-based factors that pose serious challenges to the delivery of library services in the 21st century. It is not just funding, but also the librarian that hinders the 21st century library. Factors include inflation of costs, embezzlement, bribery, and misappropriation of funds, lack of relevant skills, fear, bias, dogmatism, and ageism. Librarians should develop themselves by seeking ICT training; take full advantage of training and development, and take advantage of the knowledge and education offered by conferences and workshops; ICT skill should be accorded priority in recruiting and retaining librarians; the LIS curriculum should include 21st century advancements, to avoid churning out fresh librarians with obsolete skills; Librarians should handle library finances conscientiously without defrauding the library.

Research Methodology

This study adopted a qualitative research design to gain insight into how librarians at UNZA perceived innovation. The participants for this study were departmental librarians, and data was collected by interviews with each librarian. Face-to-face interviews were conducted with six (6) librarians between June and August, 2017. The 6 respondents were purposively sampled from a population of 55 librarians working in UNZA Library. Content analysis method was used to analyse the data.

Limitations

This study follows a case study approach to gain insight into how librarians at UNZA perceive innovation. Since the sample is small, the findings presented here suggest that future practical research will need to be firmly conceptualized to circumvent methodological mistakes. With the limited sample size in this study, generalizations cannot be attempted for organizations beyond academic libraries. However, given the homogeneity of many academic libraries in public universities, it is expected that the observations reported here will be relevant for many of these libraries in Zambia.

Findings

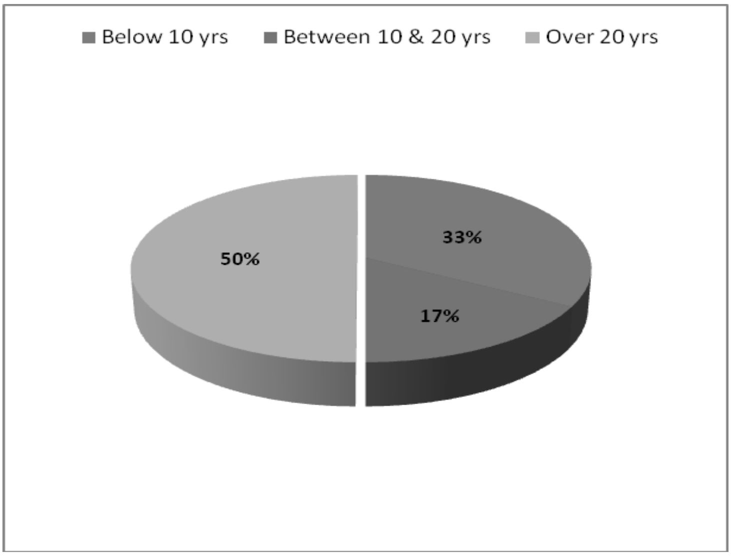
Bio data

Out of the 6 librarians that participated in the study, 2 (33.3%) respondents were male and 4 (66.6%) were female. All the 6 key informants were holders of a master' degree in Library and information Science and were heads of divisions/departments within the library. Table 1 and figure 1 below gives details of the demographic distribution of the respondents.

Table 1: Sex of respondents

GENDER	FREQUENCY	PERCENT
Male	2	33.3%
Female	4	66.6%

Fig. 1: Length of service (No. of years served)



With regard to length of service in the library, 2 (33.3%) indicated that they had worked in the library close to 10 years, 1 (16.6%) mentioned that she had been a librarian for about 15 years while 3 (50%) disclosed that they have been in the library profession for 20 years.

Importance of innovation

With regard to the importance of innovation in the university library, all interviewees indicated that innovation was a significant process for the library to survive and flourish in the 21st century. Respondents were unanimous in stressing the significance of innovation at UNZA. One respondent observed that: *"Innovation has the potential to increase the effectiveness of information service delivery."*

From the above, it can therefore be deduced that innovation is not only important, but crucial to the survival of any library.

Types of innovative services

Table 2: Types of innovative services provided by UNZA Library

INNOVATIVE LIBRARY SERVICE	FREQUENCY	PERCENT
Providing access to online resources (e-journals & e-books)	6	100%
Use of Social Media tools	6	100%
Open Access Institutional Repository (IR)	5	83.3%

Information packaging	4	66.6%
Reference Services & Pathfinders	4	66.6%
Partnership with faculty units	3	50%
Dynamic Library website	2	33.3%
Technical Services Unit	2	33.3%

Table 2 above depicts a variety of innovative services that have been successfully adopted at UNZA. As can be seen, providing access to online resources and use of social media tools both at 6 (100%) are the leading innovative services to date followed by the Institutional Repository with 5 (83.3%). Information packaging and Reference Services and path finders were at 4 (66.6%) followed by partnership with faculty units at 3 (50%). Dynamic Library website and Technical Services Unit were both at 2 (33.3%).

All the above are a pointer to the progressive actions by the library in an effort to keep improving service delivery, craft efficiency and bring value addition to some library products. Although the Technical Services Unit had 2 (33.3%), it does not necessarily mean that it is the least in importance.

Challenges of providing innovative services

In discussing some of the challenges that have prevented the library from implementing its ideal library services, majority cited poor funding, poor internet connectivity, lack of technology literacy, etc. One key informant noted that: "*We need to train ourselves to be more knowledgeable about the new formats of digital materials we are offering.*" Thus the efforts of the library in providing improved information services are hampered by the existence of some of the aforementioned barriers whose genesis is that of inadequate funding.

Envisioned innovative library services

When we asked library staff about the innovations and new services that they would like to see implemented, we received a range of responses. The study found that having mobile technologies for enhanced service delivery and more digital materials available was high on the list; with others indicating that they would love to have more e-books available. One key informant expressed the need for the library to introduce digital literacy to all library users. This is important because digital literacy is a highly sought competency among librarians and users alike, as library services are now offered through a range of media. Three respondents called for systematic re-skilling of librarians so that they could be relevant in the existing information environment. See figure 2 below.

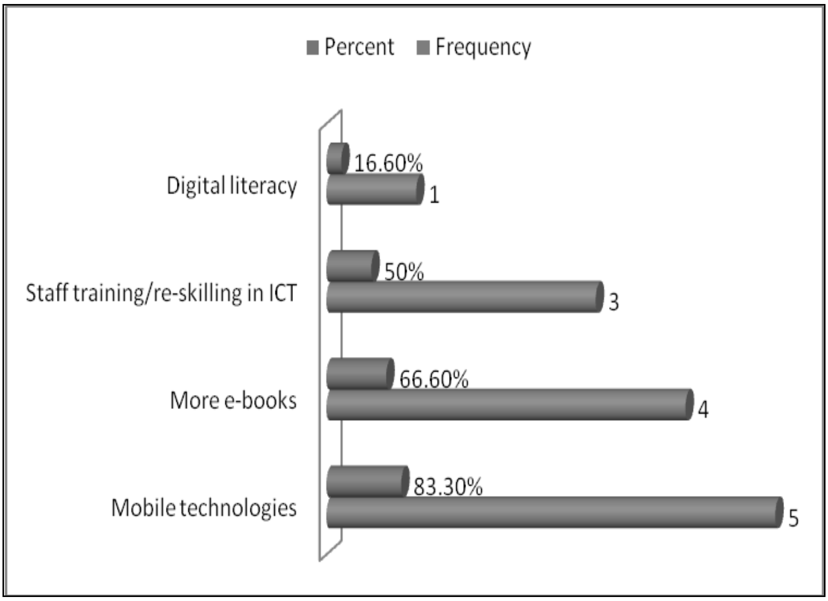


Fig. 2: Future innovative library **services**

Discussion

Importance of innovative library services

Concerning the importance of innovative library services, the study established that innovation was a critical process for UNZA to survive and thrive in the 21st century. This therefore means that the importance of innovation at UNZA cannot be underplayed. Everything possible should be done policy wise to sustain these innovative services for the good of not only the user, but the library as well. It should be mentioned that service innovation is important for several reasons. For one, it can improve the lives of library users. Secondly, innovation is the key driver for a firm's competitive advantage. Organisations that fail to innovate are less profitable. Their jobs are less secure, and their existence is not sustainable. And innovations can have a significant impact on the society as a whole.

Types of innovative services

With regard to types of innovative services already implemented, the following services were identified: providing access to online resources and use of social media tools, Institutional Repository (IR), Information packaging, online references services, partnership with faculty units, library website and availability of the technical services unit. It should be noted that the library is in the business of connecting people with information.

UNZA Library facilitates access to a number of academic/scholarly databases, electronic journals (e-journals) and electronic books (e-books), a development which was unheard of in the early 2000. This innovation has contributed to quality academic papers and improved performance by students.

Social media platforms such as Face book have made it possible for people to actually connect to one another through the Internet. According to Khan and Bhatti (2012), social media provides more opportunity for the library to reach its community, target specific audience, and give them a chance to interact with the library. By using face book, UNZA Library is now able to engage its users on issues of interest and enable them make inputs especially as it affects library services.

Packaging of information in various formats has become the standard in the digital era. This has created new opportunities for the library to provide value added services in the academic environment. UNZA Library has exploited these advantages by developing and preserving a research output of UNZA through digitalization of projects, theses and dissertations where staff can archive their scholarly works. This innovation has given rise to an Open Access (OA) Institutional Repository called University of Zambia Research Repository Online.

Pertaining to reference services and the creation of pathfinders at UNZA Library, the study established that reference service is one of the innovative practices that have brought value addition to library service delivery. Musangi (2015) notes that reference librarians in academic libraries cannot stay static or traditional in their services or outreach to users, they need to harness technology and its capabilities in order to provide the information and literacy skills needed today by the 'net-gen' generation of users. This observation is so true of reference librarians at UNZA who are trained to employ in-depth knowledge and search strategies to meet user information needs. With the advancement in technology, UNZA Library has likewise innovatively integrated technology to meet the information needs of the users. For instance, the introduction of electronic mail reference, ask the librarians and other Library website based services have transformed traditional based reference services to online reference services, etc. This has ultimately improved the knowledge of the librarians as well as the library's image. In the same vein, the creation of pathfinders has given the library a good image from the users view point. The intent of a pathfinder is to locate reference materials in a variety of formats. It is also intended to teach the process of creating reference tools for library patrons.
Regarding partnership, librarians have discovered the power of partnership with academic units to teach their students information literacy skills. It is the responsibility of libraries to inform and empower users to become resourceful.

Currently, librarians at UNZA are undertaking significant efforts to collaborate with faculty and have more of a central role within UNZA, particularly with a view to increasing information literacy skills such as literature search skills, citation styles, research methods, data analysis techniques to mention but a few.

The development of a dynamic library website is the digital front door of the library. The website has been designed to a lot more interactive features and services. It has been transformed from being a static/billboard type to a dynamic site working on promoting access to in-house library resources via the Online Public Access Catalogue (OPAC), online resources, the institutional repository, and access to an electronic learning platform called Moodle.

As regards the Technical Services Unit, a department established in 2011 to oversee library technology related duties such as in-house training of librarians in computer applications, troubleshooting, and acquisition of hardware and software packages for the library, the study established that without this unit all the other services cannot be offered effectively. This unit works hand in hand with the university's Centre for Information and Communication Technology (CICT).

Challenges

In discussing some of the challenges faced, the study discovered a number of constraints such poor funding, poor internet connectivity, lack of technology literacy to mention but a few. With respect to funding, it should be noted that funds are needed to cater for a whole range of services in the library. Funding is essential to excellent library services.

Internet plays a crucial role in accessing digital information. Therefore poor Internet connectivity is a major obstacle to accessing online information. Related to poor Internet connectivity is the lack of ICT competency among some librarians. Some librarians are averse to technology and perceive the application of computers to library work as an aberration. This being the case, they are hesitant to adopt new technology. This slows service delivery and retards productivity.

Regarding lack of technology literacy among librarians, this study established that some library staff were technologically challenged and therefore were a hindrance to innovation itself. This result agrees with Anyira (2011) who found that librarians without a well developed ICT skill cannot render effective library services, thus, lack of skills among librarians constitute a major obstacle to service delivery in the 21st century.

Thus, the efforts of UNZA Library in providing modern information services are hindered by the existence of the aforementioned problems whose genesis is that of inadequate funding. It is therefore imperative that the aforesaid challenges are urgently and adequately addressed if quality service delivery is to be realized and appreciated by all stakeholders.

Envisaged innovative library services

With regard to the kinds of innovative services librarians would want the library to adopt in the near future; the study established that there was the need to introduce mobile technologies for enhanced service delivery, more e-books, digital literacy to all library users and systematic re-skilling of librarians so that they could be relevant in the existing information environment. The view of the respondents was that using more of these media platforms, can greatly help the library engage more of its users on issues of interest and enable them make inputs especially as it affects library services. This aligns with what Chitumbo and Chewe (2015) opined that academic libraries need to implement web 2.0 tools for improved service delivery.

Conclusion and implication for librarians

In general, this study investigates librarians' perception on innovative services that have successfully been implemented at UNZA. Therefore, the overall findings allow us to conclude that the emergence of ICT has brought a paradigm shift in the way UNZA Library delivers information to its users. This means that library services that were predominantly traditional have been transformed into modern ones with the help of ICT while new ones have been introduced. The present scenario poses an implication for librarians and the university management as a whole. The library must consolidate its gains in terms of innovation in order for the institution to remain relevant in this present age.

Recommendations

Based on the findings of the study, the following recommendations were made:

- UNZA Library should always be attuned to users' ever-changing information needs and continuously re-examine the relevance of current service offerings.
- When a library's offerings decline in importance and create a call for changes, library leadership should advocate for service innovation and encourage library employees to take risks and experiment.
- A dedicated innovation team with a high level of decision-making autonomy and dedicated resources should be created.

- Training of librarians in ICT should be given precedence. This is because the success or failure of an innovative service depends on the caliber of staff.

References

Anyira, I. E. (2011). One among the twelve: how library professionals constitute a serious challenge to the provision of library services in the 21st century. Available at: http://digitalcommons.unl.edu/libphilprac. Retrieved 20 September 2017

Arora, J. (2009). Library 2.0: Innovative technologies for building libraries of tomorrow. Available at: http://ir.inflibnet.ac.in/handle/1944/1460. Retrieved 20 September 2017

Basahuwa, B. (2017). Innovation in Academic Libraries in the 21 Century: A Nigerian Perspective. International Journal of Applied Technologies in Library and Information Management 3 (1) 3 - 18 - 30 ISSN: (online) 2467 – 8120. Available at: http://www.jatlim.org/volumes/volume3/vol3-1/comfort.pdf. Retrieved 20 September 2017

Chitumbo, E.M.M. & Chewe, P. (2015). Social media Tools for Library service delivery in Higher learning Institutions: Case of University of Zambia and National Institute of Public Administration Libraries. Research Journal of Library Sciences ISSN 2320–8929 Vol. 3(5), 1-7, Res. J. Library Sci.

Islam, M.A., Agarwal, N.K. & Ikeda, M. (2015). Knowledge Management for Service Innovation in academic libraries: A qualitative study, Library Management, Vol. 36, No. (1/2), 40-57. Available at: http://journals.sagepub.com/doi/abs/10.1177/0340035217710538 Retrieved 24 Nov 2017

Kaur, H. & Sharda, P. (2010). Role of technological innovations in improving library services. *International Journal of Library and Information Science*, *2*(2), 001-016. Retrieved from: http://www.academicjournals.org/journal/IJLIS/article-abstract/70A6E45898

Khan, S. A. & Bhatti, R. (2012). Application of social media in marketing of library and information services: A case study from Pakistan. *Webology*, *9*(1), 1-8. Available at: http://www.webology.org/2012/v9n1/a93.html Retrieved 24 Nov 2017

Musangi, P. S. (2015). Redefining Reference Services In Academic Libraries: A Critical Review.
Retrieved from: http://localhost:80/xmlui/handle/123456789/398 Retrieved 24 Nov 2017

Musangi, P. S. (2015). Library 2.0 and the changing landscape of information services in academic libraries. Retrieved from: http://www.academicjournals.org/journal/IJLIS/article-full-text/69CE02056069

Walter, S. & Lankes. R. D. (2015). The innovation agenda. *College & Research Libraries*, *76*(7), 854-858. doi:10.5860/crl.76.7.854

KNOWLEDGE MANAGEMENT AND INNOVATIVE SERVICES IN UNIVERSITY LIBRARIES IN NIGERIA

C. I Ugwu
Department of Information Science, University of South Africa

and
Justina N Ekere
Library Department, University of Nigeria, Nsukka.

Abstract

Managing knowledge effectively leads to innovation. Academic libraries are beginning to implement knowledge management for the purpose of innovating services. However, there are little or no quantitative studies on knowledge management and service innovation in the context of university libraries in Nigeria. Through a survey of 250 librarians, this study investigates the effect of knowledge management (KM) on service innovation. The study found that knowledge capture/creation knowledge sharing/transfer, and knowledge application/use significantly impact service innovation in university libraries. In conclusion, the process of service innovation can be enhanced in university libraries by utilizing the phases of KM cycle as demonstrated in this study.

Introduction

University libraries in Nigeria are facing many challenges. Some of the challenges include coping with changes brought by advances in technology, shrinking budget allocations and increasing user demands. These challenges are now forcing many Nigerian university libraries to begin to look beyond their professional boundaries. However, authors like Islam, Agarwal and Ikeda (2017) have suggested that innovation is the key solution to the challenges facing academic libraries in the world today. Further, knowledge is the precondition for innovative activities in organizations. As innovation is dependent on knowledge, the same knowledge creates problems for innovation to take hold in organizations. According to Du Plessis (2007), the amount of knowledge generated in organizations has made the process of innovation a complex one. This complexity needs to be managed so as to improve innovation. There are quite a number of studies that have shown the importance of KM in improving innovation (Islam et al, 2017; Du Plessis, 2007; Adams and Lamont, 2007; Darroch and McNaughton, 2002). Innovation in itself is important to libraries. For instance, to keep pace with the increasing user demands, libraries need to leverage their strengths and to innovate to provide more responsive and flexible services (Li, 2006). Islam et al (2017) state that "libraries need to embrace a scenario where knowledge is not just managed in the form of books and periodicals but created"(p.2). Libraries also need to leverage employee and user knowledge along with the emerging technologies (Islam et al, 2015).

However, while there are studies on KM in libraries (see Ugwu and Onyancha, 2017; Sarrafzadeh et al, 2010; Maponya, 2004; Wen, 2005) and on innovation in the context of libraries (see Brundy, 2015; Islam et al, 2015; Ward, 2013; Jantz, 2012; Scupola and Nicolajsen, 2010; Li, 2006), little or no studies have tried to provide empirical evidence linking KM with service innovation in academic libraries within Nigerian context. The purpose of this study is to investigate the effect of KM on service innovation in university libraries in Nigeria. Specifically, this study intends to determine:

1). The effect of knowledge capture/creation on service innovation.
2). The effect of knowledge sharing/capture on service innovation.
3). The effect of knowledge application/use on service innovation.
4). The overall effect of knowledge management on service innovation.

Literature Review

Concept of KM and the Library

Knowledge management is viewed differently by scholars (see Nonaka and akeuchi, 1995; Dalkir, 2013; Townley, 2001; Harloe and Budd, 1994). Nonaka and Takeuchi (1995: 3) define KM as the "capability to create new knowledge, disseminate it throughout the organization and embody it in products, serviced and systems. The key concept in this definition is knowledge, which has become one of the organization's key resources. Knowledge is defined as a "fluid mix of framed experience, value, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information" (Ma et al, 2008: 98). At the bottom of the knowledge value chain is data, which consist of unfiltered facts(Townley, 2001). Townley further states that data becomes information with the addition of contexts. The knowledge management cycle may be described as the process of transforming information into knowledge as a strategic valuable organizational assets. It is made up of a series of knowledge processing steps which include but not limited to knowledge capture, knowledge creation, knowledge contribution, knowledge filtering or selection, knowledge codification, knowledge refinement, knowledge sharing, knowledge access, knowledge learning, knowledge application, knowledge evaluation and knowledge re-use (Dalkir, 2013). Dalkir's KM cycle was obtained from a review of literature on KM processes. However, Agarwal and Islam(2014) have simplified these steps further by integrating them into three phases of KM cycle, namely: knowledge capture/creation, knowledge sharing/transfer, and knowledge application/use. Each of these three broad steps or phases is a component of KM. For instance, knowledge creation is an "integral part of knowledge management (Islam et al, 2017:2).

Since the steps underlying KM cycle represent integral parts of KM, Townley (2001) writes that a library is expected to select the knowledge that is most likely to help it achieve its goals. Depending on the goal of the library, appropriate/knowledge is required. This argument has been exemplified by authors such as Harloe and Budd (1994) and Townley (2001) who maintain that if the goal of the library is to achieve the effectiveness of the library portal, knowledge creation will require usage data. Furthermore, if the goal of the library is to increase patron satisfaction, the information required to achieve this will be obtained from organizing focus groups and carrying out surveys and interviews of patrons. Thus, this information with usage statistics will lead to knowledge user needs.

Some authors have tried to discuss the benefits of KM to library personnel (Teng and Hawamdeh, 2002), promoting a culture of knowledge sharing and expanding the library's role to areas such as administration or support services (Townley, 2001; Teng and Hawamdeh, 2002). Further studies on KM in libraries have focused on few areas such as librarians' awareness or perception of KM(Siddike and Islam, 2011), the relationship between KM and libraries (Roknuzzaman and Umemoto, 2009; Sarrafzadeh et al., 2010), need for KM in libraries (Wen, 2005), KM and digital libraries (Islam and Ikeda, 2014), mapping of KM tools and cycle for libraries (Agarwal and Islam, 2014), adoption of KM in libraries using web 2.0 (Islam et al, 2014) and relationship between KM and organizational factors in university libraries (Ugwu and Onyancha, 2017).

Service Innovation and the Library

Service concept relates to how the customer needs are to be satisfied and what is to be done for the customer (Islam et al, 2017). Service innovation goes beyond service concept to include the client interface, the delivery system and technology (Hertog, 2000). Service innovation is defined as changes that offer value to the provider and affect service characteristics, and may be completely new to others (Gallouj and Weinstein, 1997).

Innovation is critical for libraries for their growth and survival (Li, 2006; Scupola and Nicolajsen, 2010). Elements of innovation, according to Lasneski (2015), include critical thinking, communication, and collaboration and creativity (4Cs). Islam et al (2017) state that adapting these elements into the library setting will help to facilitate innovation. A lot of innovation has been happening in libraries. Examples of innovations in library services include sending of a welcoming text message to the patron's phone when entering the library, use of RFID for books and cards, stations for podcasting and video casting, organizing related materials in one place by subject, encouraging patrons to hang out in the library, meet friends, have coffee, and pursue hobbies, learning courses in the library, and providing seed exchange services whereby patrons can borrow vegetables, herb and flower seeds, grow plants and return the seeds to the library at the end of harvest season (Best Colleges Online, 2016; Mashville Public Library, 2016; Islam et al,. 2017) as well as making library resources more accessible to Wikipedia (Barr and Zenni, 2016). These examples are happening in public libraries around the world. Some academic libraries are now trying to be innovative by responding to campus needs, having technology integrated into every aspect of library service, embracing flexibility and providing places to engage(Lukamic , 2014) innovation in academic libraries is now a necessity and no longer a consideration(Brundy, 2015) .

There are few studies that have looked at innovation in the context of academic libraries (White, 2001; Sheng and Sun, 2007; Scupola and Rheolajeen, 2010; Jing and Jin, 2009). Areas covered by these studies include relationship between library and innovation in digital reference services, customer role for service innovation, and knowledge innovation culture and innovation ideas in academic libraries. Further, some of the innovation ideas in academic libraries include: research data management to provide new services like where to find other people's work (Elves, 2015), proposing frameworks such as resources processes-values framework to help administrators become innovators and to foster an innovation culture (Yeh and Walter, 2016) and developing a conceptual model that utilizes the interaction between critical resources and technologies to deliver service innovation in academic libraries (Yeh and Ramirez, 2016).

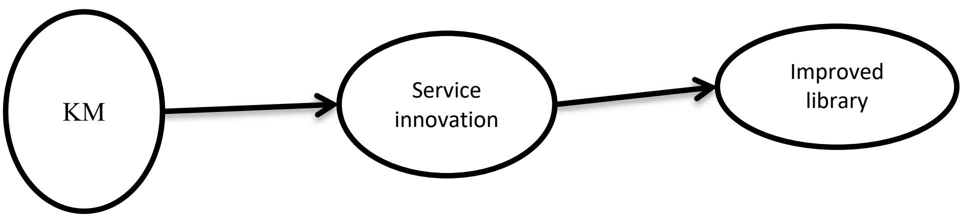
KM and Service Innovation in Libraries.

At the centre of service innovation is the customer, and in the library, the customer is the user. Library user or customer KM is conceptualized as the utilization of knowledge for, from and about users or customers so as to enhance the customer relating capability of organizations (Salomann et al, 2005). In the context of academic libraries, knowledge for customers has to do with satisfying patron requirement for knowledge about services and other relevant items. Knowledge from customers refers to ideas and suggestions that would be useful for the library to implement. Knowledge about customers refers to understanding the patterns of patron information needs which include those that have been met through library services and those that are yet to be met. For instance, Kim and Abbas (2016) have found that RSS and blogs are widely adopted by academic libraries through a KM perspective whereby blogging enables the library to aggregate knowledge from users. Further, Rowley (2011) state that new service development in academic libraries depends on such factors as employee skills, availability of tangible and intangible resources, IT adoption, management support, innovation processes and user knowledge. Service innovation also requires knowledge of barriers prevalent in the library that need to be overcome before innovation can happen (Islam et al 2017). It has also been stated that KM is important for innovation in libraries because it helps to gather knowledge of user needs, innovation possibilities and barriers (Islam et al 2015).

Research Model and Development of Hypotheses

The research model for this study, as shown in fig.1 below, is based on the two variables, namely KM and service innovation. The model is helpful in demonstrating the relationship between KM and service innovation in academic libraries. While the steps in KM cycle are independent variables, service innovation is dependent variable.

Figure 1: Research Model



It is expected that the relationship between KM and service innovation will lead to improved library services or make library services to be more responsive and flexible (Li, 2006).

KM (Independent Variable)

The steps of KM cycle have been identified by Agarwal and Islam (2014) as consisting of knowledge capture/creation, knowledge sharing/transfer and knowledge application/ use. Studies have shown that the ability to create new knowledge is often at the heart of the organization and that knowledge creation and innovation have a strong relationship (Darroch, 2005; Schulzeand Hoegl, 2008). Further, McAdam et al (2006) have conceptually established the relationship between knowledge creation and idea generation. Once knowledge has been captured and codified, it needs to be shared and disseminated throughout the organization (Dalkir, 2013). Through knowledge sharing, employees can exchange ideas or their knowledge and contribute to innovation for the organization (Wang and Noe, 2010). Lundrall and Nielsen (2007) are of the view that organizational innovation depends on employees' tacit and explicit knowledge. A library that can promote knowledge sharing practices among employees or between employers and users is likely to generate new ideas for innovation (Islam et al, 2017). When knowledge has been captured and shared, it becomes ready for use. Islam et al (2017) maintain that KM succeeds when knowledge is used. Cavusgil et al (2003) have shown that creating and using knowledge can lead to innovation. Based on the studies reported here, it is hypothesized that:

H1: Knowledge capture/creation will positively affect innovation in library services

H2: Knowledge sharing/transfer will positively affect innovation in library services

H3: Knowledge application/use will positively affect innovation in library services

Innovation in library services (Dependent Variable)

Service innovation has generally been classified as service concept, the service interface, the delivery system, and technology use (Herlog, 2000). In the context of libraries, service innovation refers to "new or improved technology interfaces, improved services, methods and other continuous work for patron satisfaction" (Islam, 2014:41). In this study, innovation in library services is defined as satisfying user needs through new ideas or services, new delivery methods, improved user interfaces as well as new technology applications (Islam et al, 2017). Knowledge management is now a pre-condition for organizational innovation. Tsai (2001) states that implementing knowledge management promotes learning and cohesion among organizational units, creates organizational knowledge and increases the capability of the units to innovate. Furthermore, KM activities in organizations are capable of supporting employees to utilize organizational resources, to improve their innovative ability and to promote organizational innovation (Chen and Huang, 2009; Darroch, 2005). Based on these studies, though carried outside the library setting, it is hypothesized that:

H4: Knowledge management will positively affect innovation in library services

Methodology

Research type

This study proposed four hypotheses aimed at determining the relationship between knowledge management and innovation in library services. Quantitative approach underpinned by positivist philosophy was deemed appropriate for this study to determine this relationship through a field study utilizing a questionnaire for data collection. The questionnaire item used the 5-point Likert scale.

Sample

Academic librarians in Government-funded university libraries in Nigeria are the taught population for this study. University libraries were chosen because they speed up knowledge creation and transfer by providing innovative services to students, researchers and faculties. The academic librarians were drawn from the list maintained by the Librarians' Registration Council of Nigeria and only the librarians with active email addresses were contacted to participate in this study. Through this way, a total of 500 academic librarians were contacted to request for their consent to participate in the study. The purpose of the study was explained to them and they have the right to opt out by not filling out the questionnaire.

Measures

KM process

The classification of KM process by Agarwal and Islam (2014) and Dalkir (2013) was used. These authors classified KM process into: (1) knowledge capture/ creature, (2) knowledge share/transfer, and (3) knowledge application/ use. Knowledge capture/creation refers to gathering information of user needs, of innovation possibilities and of barriers to innovation (Islam et a,l 2015). Knowledge sharing/transfer is an activity through which tacit and explicit knowledge is exchanged through information dialogues, face – to face meeting, and group discussion (Islam et al, 2017). Knowledge application / use is an "activity through which the knowledge of user needs, barriers, innovation possibility and the overall knowledge of employees and users is analyzed and synthesized to come up with creating innovative ideas to overcome barriers to innovation and to enhance library services" (Islam et al,2017: 6). The measures of knowledge capture/creation, knowledge sharing/transfer and knowledge application /use were gathered from different literature sources (Islam et al, 2015; Schulze and Hoegl, 2008; Agarwal and Islam, 2014; Wang and Wang, 2012; Kor and Maden, 2013; Xu, 2011).

Innovation in Library Services

Item measures for innovation in library services were developed from literature sources or adapted to suit the study (Edvardsson and Olsson,1996, Islam et al, 2017; Wang and Wang, 2012; Kor and Maden, 2013)

Data Collection and Analysis

The survey instrument was pretested on 16 librarians from the University of Nigeria, Nuskka Library system so as to check for any wording issues. Minor changes were made based on suggestions. The questionnaire was validated by three lecturers in the Department of Library and Information Science, University of Nigeria, Nsukka. Filling out the questionnaire implied consent. Thus, a participant could choose not to answer a question he/she was not comfortable with. In order to protect the identity of the participants, no names, email addresses or library names were gathered. Out of a total of 500 copies of questionnaires distributed, 250 copies were returned and found eligible. These copies were distributed via the email addresses of the librarians contacted to participate in the study. The return rate of the questionnaire was 250/500 or 50%.

A reliability analysis was carried out using Cronbach's alpha. Table 2 shows the descriptive statistics and Cronbach's alpha for the variables in the research model. After completing the reliability analysis, hypothesis testing was done using multiple linear regressions. The internal consistency was above 0.85 for all constructs.

Results of the Study

Demographics

The demographic distribution of the survey respondents are shown in table 1 below.

Table 1: Demographics (N=250)

Gender	Age	Education	Work experience
Female: 145(58%)	Mean: 45.67	Masters:101(40.4%)	Less than: 5(2%)
Male: 105(42%)	SD: 12.45	Ph.D; 53(21.2%)	11 – 20: 45(18%)
		Bachelors: 96(38.4%)	21 – 30: 95(38%)
			Above 30: 105(42%)

Table 1 shows that the librarians who participated in the study had more than 30years (42%) work experience in the library field. Majority of the participants were female (50%), their average age was 45.6. and most of them held master degree as their highest educational qualification.

Descriptive statistical analysis of the research constructs

Table 2 shows the descriptive statistical analysis of all constructs in the research model. The Cronbach's alpha values of each of the constructs where also shown. The internal consistency was above 0.85 for all constructs. The mean value of each of the constructs was high showing that the librarians who participated in the study were committed to KM activities as well as innovation in library services. While the mean value of their innovative activities was 3.67, the greatest KM activity of the librarians was in the area of knowledge capture/ creation (Mean = 3.85.)

Table 2: Descriptive statistics and Cronbach's alpha

Code	Construct	No of item	Mean	SD	Reliability
KC	Knowledge capture/creation	5	3.83	0.95	0.90
KS	Knowledge sharing /transfer	5	3.61	0.92	0.87
KA	Knowledge application /use	6	3.58	0.85	0.90
SI	Innovation in library services	4	3.69	0.90	0.86

Hypothesis testing

Hypothesis testing was carried out using multiple linear regressions. Table 3 shows the B coefficients for the effect KC, KS, and KA on SI. As shown in this table, H1, H2, and H3 were strongly supported ($p < 0.05$). The adjusted R – Square (coefficient of determination) was 0.46.

Table 3: Effect of KC, KS and KA on SI

		Standardized	coefficients	
		Beta	t	Sig.
	Constant	0	2.89	0.000
H1 supported	KC	0.34	3.27	0.002
H2 supported	KS	0.32	2.89	0.004
H3 supported	KA	0.32	2.95	0.003

Further, Table 4 shows the effect of KM on SI. This was accomplished by regressing SI on KM. The average of KM, KS and KA was computed to arrive at scores for over all knowledge management activities in Nigerian university libraries.

Table 4: Effect o KM on SI

			Standardized coefficient	
		Beta	T	Sig.
	Constant	0	5.28	0.000
H4 supported	KM	0.65	8.36	0.002

The results in Table 4 shows that H4 was strongly supported ($p < 0.05$). This means that knowledge management strongly influences services innovation in university libraries in Nigeria.

Discussion of Findings

In this study, four hypotheses were tested. The first hypothesis was tested with a strong relationship between knowledge capture/ creature and service innovation. The second hypothesis was tested whereby a strong relationship was found between knowledge sharing / transfer and service innovation. The third hypothesis was also tested with a strong relationship between knowledge management and services innovation. However, knowledge capture/creation has the strongest influence on service innovation in university libraries in Nigeria.

The findings support the view that academic libraries with more capability of knowledge capture/ creation are likely to offer more innovative services to their users. Similarly, academic libraries with defined knowledge sharing/ transfer practices and better-developed knowledge application / use practices are likely to offer more new services. The relationship between knowledge capture/creation and service innovation, between knowledge sharing/transfer and service innovation, and between knowledge application/use and service innovation is conceptually supported in the literature, although not well supported with empirical evidence. The findings of this study are in conformity with studies conducted outside the library context such as Schulze and Hoeglb (2008) and Darroch (2008) which found that innovation is extremely dependent on knowledge creation, sharing and its proper application. These studies further found that creating, sharing and applying knowledge effectively leads to innovation or generation of new services in organizations. The results also support Islam et al's (2017) study conducted in the context of academic libraries that found strong relationship between knowledge creation, its application and service innovation. The important finding in this study is that though knowledge capture and knowledge sharing are key components of KM they do not lead to innovation. It is only when the captured and shared knowledge is used and applied that it leads to innovation. This supports the assertion by Dalkir (2013) that in the absence of knowledge application /use, the other phases of the KM cycle are in vain. Thus, academic libraries ought to have knowledge capturing, sharing and use or application capabilities to be able to offer innovative services.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Library management should set out to implement knowledge management because it provides an environment for innovative library services.
2. Information related to user needs, innovation possibilities and barriers to innovation should be gathered for the purpose of generating new library services.
3. Research and discussion groups or network of knowledgeable staff should be formed in the library for sharing of knowledge.
4. Information gathered on user needs, innovation possibilities and barriers to innovation should be analyzed and synthesized to enhance library services.

Conclusion and Implications

The present study represents an attempt to establish the relationship between the underlying phases of KM and service innovation. The study found that academic librarians in Nigerian university libraries are practicing knowledge capture/creation, knowledge sharing, and knowledge application activities. The three phases of KM cycle are playing important role in university libraries' offerings of innovative services in Nigeria. Overall, the study shows a positive relationship between KM and innovation in university libraries in Nigerian context.

The study provides understanding of how librarians perceive KM and service innovation and the role of KM in bringing about innovative changes in library services. It is important for librarians to know the effect of KM on SI because it is a way of determining whether especially the university libraries in Nigeria are ready to implement KM or not. This study has shown that adopting KM would lead to service innovation in university libraries in Nigeria that are currently facing the challenges of budget cuts, increasing user demands and competitive information environment.

The study has implications for researchers interested in both KM and service innovation areas. The primary contribution of this paper is to open further areas of research by bringing KM and service innovation together for university library development in Nigeria. The reason is that innovation is the key or solution to many problems that university libraries in Nigeria are facing.

The study had some limitations. First, the return or response rate of the research instrument was 50%. This might have been affected by mails going to the participants' spam folders or perhaps by people deciding to ignore survey requests due to lack of gratification or tangible incentives. Second, as the concept of KM is still not clear to some librarians, the use of questionnaire as the only method of data collection might have affected the results in one way or another. Further studies in this research area should supplement questionnaire method with interviews. The present study has, therefore, shown the value of utilizing the perceptions of librarians to determine the effect of KM on service innovation in university libraries in Nigeria.

References

Adams, GL and Lamont, BT (2003) knowledge management systems and developing sustainable competitive advantage. *Journal of knowledge Management* 7(2):142_154.

Agarwal, NK (2011) Verifying surveys items for construct validity: A two stage sorting procedure for questionnaire design in information behavior research.

Proceedings of the American society for Information Science and Technology 48(1): 1-8.

Agarwal, NK and Islam, MA (2014) Knowledge management implementation in a library: Mapping tools and technologies to phases of the KM cycle. *VINE: TheJournal of Information and Knowledge Management System* 44*(3)*: 322-344.

Alvite, L and Barrionuevo, L (2011) *Library for Users: Services in Academic Libraries.*Oxford:Chandos.

Bar,r C and Zenni, N (2016) *14 Projectd Win 2016 Knight News Challenge on Libraries.* Knight Foundation. 23 june 2016. Available at: http:/www.knightfoundation.org/articles/knight-news-challenge-libraries-awards-16-million-support-innovative-ideas(accessed 2 March 2017).

Brundy, C (2015) Academic libraries and innovation: A literature review. *Journal of Library Innovation 6(1):22.*

Dalkir, K (2013) *Knowledge Management in Theory and Practice. 2nd edn.*Cambridge, MA: MIT Press.

Darroch, J (2005) Knowledge management innovation and firm performance. *Journal of Knowledge Management 9(3): 101-115.*

Darroch, J and McNaughton R (2002) Examining the link between knowledge management practices and types of innovation. *Journal of Intellectual Capital* 3(3): 210-222.

Du Plessis, M (2007) The role of knowledge management in innovation. *Journal of knowledge management in innovation* 11(4): 20-29.

Edvarddsson, B and Olsson J (1996) key concepts for new service development. *Service Industries Journal 16: 140-164.*

Elves R (2015) innovation in libraries: Report from the Business Libraries Association annual conference.*SCONUL Focus 65: 54-57.*

Gallouj, F Weinstein O (1997) Innovation in services. *Research Policy* 26(4/5): 537-556.

Harloe, B and Budd JM (1994) Collection development and scholarly communication in the era of electronic access.*Journal of Academic Librarianship 20(2): 83-87.*

Hertog, PD (2000) Knowledge-intensive business services as co-producers of innovation.*InternationalJournal of innovation Management* 4(4): 491-528.

Heskett, JL(1986) *Managing in the Service Economy.* Boston, MS: Havard Business Press

Islam, MA and Ikeda M (2014) Convergence issues of knowledge management in digital libraries: Steps towards state-of-the-art digital libraries. *VINE: The Journal of Information and Knowledge Systems* 44(1):140-159.

Islam, MA, Argarwal NK and Ikeda M (2014) Library adoption of knowledge management using Web 2.0: A new paradigm for libraries. *IFLA Journal 40(4): 317-330.*

Islam, MA, Agarwal NK and Ikeda M (2015a) Knowledge management for service innovation in academic libraries: A qualitative study. *Library Management* 36(1/2): 40-57.

Islam, MA, Agarwal NK Ikeda M (2015b) Conceptualizing value co-creation for service innovation in academic libraries. *Business Information Review* 32(1): 45-52.

Jantz, RC (2012) Innovation in academic libraries: An analysis of university librarians' perspectives. *Library& Information Science Research* 34(1): 3-12.

Jing, G and Jin, C (2009) the innovation university library: Strategic choice, construction practices an development ideas. *Library Management* 30(4): 295-308.

Kellogg, C (2014) Florida Polytechnic Unversity opens with the bookless library. *Los Angeles Times, 20 August 2014.* Available at: http//www.latimes.com/books/jacketcopy/la-et-jc-florida-polytechnic-opens-with-bookless-library-20140820-story,html (accesses 2 March 2017).

Kim, YM and Abbas, J (2010) Adoption of Library 2.0 functionalities by academic libraries and users : A knowledge management perspective. *Journal of Academic Librarianship* 36(3): 211-218.

Lesneski, T (2015) *The Library as a Center for Innovation.* Available at: *http://www.demcointeriors.com/blog/the-library-as-a-center-for-innovation/ (accessed 2 March 2017).*

Li, X (2006) Library and incubating space for innovations: practices, trends and skill sets. *Library Management* 27(6/7): 370-378.

Lukanic, B (2014) 4-Ways academic libraries are adapting for the future. *Fast Company Newsletter,* 24 October 2014. Available at: http://www.fastcoexist .com/3036939/4-ways-academic-libraries-are-adapting-for-the-future (accessed 2 March 2017).

Maponya, PM (2004) Knowledge management practices in academic libraries: A case study of the University of Natal Pietermaritzburg Libraries. In: *16th Standing Conference of Eastern, Central and Southern Africa Library and Information Association (SCECSAL XVI) Towards a knowledge society for African development (*edsBirungi P and Musoke MG), Kampala, Uganda, 5-9 July, pp.125-148). Kampala: Uganda Library Association & National Library of Uganda.

Roknuzzaman, M and Umemoto, K (2009) How library practitioners view knowledge management inlibraries: A qualitative study. *Library Management* 30(8/9): 643-656.

Rowley, J (2011) should your library have an innovation strategy? *Library Management* 32(4/5):251-265.

Salamann, H; Dous, M,; Kolbe, L; and Brenner, W(2005) Rejuvenating customer management: How to make knowledge for, from and about customers work. *European Management Journal* 23(4): 392-403.

Sarrafzadeh, M, Martin, B and Hazeri, A (2010) Knowledge management and its potential applicability for libraries. *Library Management* 31(3) 198-212.

Schulze, A and Hogel, M (2008) Organization knowledge creation and the generation of new product ideas: A behavioral approach. *Research Policy* 37(10): 1742-1750.

Scupola, A and Nicolajsen, HW(2010) Service innovation in academic libraries: Is there a place for the customers? *Library Management* 31(4/5): 304-318.

Sheng, X and Sun, L (2007) Developing knowledge innovation culture in libraries. *Library Management* 28(1/2): 36-52.

Siddike, MAK and Islam, MS (2011) Exploring the competencies of information professionals for knowledge management in the information institutions of

Bangladesh. *International Information institution & Library Review* 43(3): 130-136.

Teng, S and Hawamdeh, S (2002) Knowledge management in public libraries. *AslibProceedings* 54(3): 188-197.

Townley, CT (2001) Knowledge management and academic libraries.*College & Research Libraries* 62(1):44-55.

Wang, S and Noe, RA (2010) Knowledge sharing: A review and directions for future research. *Human Resources Management Review* 20(2): 115-131.

Wang, Z and Wang, N (2012) Knowledge sharing, innovation and firm performance. *Expert System with Applications* 39(10): 8899-8908.

Ward, DM (2013) Innovation in academics libraries during a time of crisis.*Theses and Dissertations.Illinois State University Research and eData* (ISU ReD).Paper 35.

Wen, S (2005) Implementing knowledge management in academic libraries: A pragmatic approach. *Ann Arbor* 1001(2005): 48109-1205. Available at http://www.whiteclouds.com/iclc/cliej/c119wen.htm (accessed 11 May 2017).

White, M D (2001) Diffusion of an innovation: Digital reference service in Carnegie Foundation Master's (Comprehensive) academic institution libraries. *Journal of Academic Librarianship* 27(3): 173-187.

Xu, L (2011) Managing customer services: Customer knowledge management in service innovation. In *8th International Conference on Service Systems and Service Management* (ICSSSM), Tianjin, China, 25-27 June2011, pp.1-4. IEEE.

Yeh, ST and Ramirez, R (2016) A conceptual model of service innovation: The case of academic libraries. In: AMCIS 2016 *Proceedings, Strategic and competitive use of information technology*, AIS Electronic Library. Available at: http://aisle.aisnet.org/amcis2016/SCU/Presentation/8/ (accessed 11 May 2017).

Yeh, ST and Walter, Z (2016) Determinants of service innovation in academic libraries through the lens of disruptive innovation. *College & Research Libraries* 77(6): 795-804.

AN ANALYSIS OF THE KNOWLEDGE AUDIT METHODOLOGY: A CASE STUDY ON THE NATIONAL SCHOOL OF GOVERNMENT

Mmakwena Molala
Director - Knowledge Management
National School of Government
South Africa

and
Jacqueline Nkate
Deputy Director - Knowledge Management
National School of Government
South Africa

Abstract

The National School of Government (NSG) is a government institution whose mandate is to provide training to the public servants. Therefore, the institution is highly reliant on knowledge to achieve its strategic objectives. The Knowledge Management (KM) unit at the NSG is responsible for providing KM services to the NSG and facilitating the creation of an organisation-wide KM culture.

This case study examines the methodology that was followed to conduct a Knowledge Audit (KA) at the NSG and compares it with other KA methodologies recommended in the KM literature to determine if there is coherence between theory and practice. The scope of the study only limited to the KA methodology without discussing the findings of the audit itself.

In the 2015/16 financial year, prior the development of the organisational KM strategy, the KM unit undertook a KA to assess the state of knowledge and identify the knowledge needs within the organisation. The outcome of the KA was used to inform the development the organisational KM strategy. The deliverable of the KA process was a detailed KA report which served as a guiding document for the development of the organisational KM strategy. The presenters aim to share the outcome of their case study and engage further with fellow KM practitioners on their experiences in relation to the knowledge audit processes in their various organisations.

Key words: *Knowledge Management, Knowledge Audit, Knowledge Needs, Knowledge Inventory*

Introduction

The establishment of KM functions and/or initiatives in various South African government departments attests to the recognition of knowledge as a strategic asset in organisations. The public service is the biggest generator of knowledge. As such, it is important that the knowledge generated by government entities be effectively managed and utilised to support the achievement of organisational targets. Organisations require knowledge for innovation, sound decision making and operational efficiency.

As a government institution whose mandate is to provide training to the public servants, the NSG is highly reliant on knowledge to achieve its strategic objectives. Knowledge is the NSG's key product. The NSG's KM function was thus established to support the department in achieving its mandate by promoting organisational learning and ensuring effective management of knowledge. While the NSG envisages to achieve standardisation in terms of the quality of services rendered to its clients, it also needs to customise the service offerings according to each client's information and knowledge requirements.

To assess the state of knowledge and identify the knowledge needs within the organisation, the NSG's KM unit conducted a KA in the 2015/16 financial year. As with most organisations, the KA was conducted before the development of the organisation's KM strategy. The outcomes of the KA were used to inform the development the organisational knowledge management strategy.

Relevance of knowledge audits

Gourova, Antonova and Todorova (2009) define KA as a process of investigating the state of an organisation in terms of available knowledge and "further needs, knowledge flows and sharing among employees" as well as the use of knowledge in the business processes. KA determines "what knowledge the organisation needs, where that knowledge is, how it is being used, what problems and difficulties exist, and what improvements can be made" (Serrat, 2017).

Conducting a KA is often regarded as the first and most important step to establishing a KM initiative in an organisation (Levy, Hadar, Greenspan, and Hadar, 2010). However, KA is not a once-off exercise that is only undertaken prior the development of the KM strategy but a process that needs to be undertaken frequently in order to adequately respond to changes in the work environment and varying knowledge needs. As stated by Ragsdell, Probets, Ahmed and Murray (2014), "an iterative cycle of knowledge audits can also trigger informed interventions". A detailed KA helps an organisation identify its knowledge assets as well as its knowledge needs, gaps and opportunities that are critical for the achievement of its strategic objectives.

Despite the adoption of KAs in organisations, there is limited literature on the methodologies for conducting a KA (Du Toit, 2014). Also, there seems to be no consistency in terms of how different organisations conduct their KAs. This inconsistency and lack of sufficient guidance can result in reinvention of the wheel and inefficient use of resources in organisations. Despite the KA methodologies recommended in the KM literature, the decision regarding which KA methodology to use lies solely with the organisation.

Yip, Lee, and Tsui (2015) are of the view that the choice of KA methodology is dependent on the type of knowledge that an organisation would like capture, particularly in relation to business processes. Accordingly, KA can be conducted to "identify and capture procedural knowledge" where business processes are structured and routine or to "facilitate the sharing of experiential knowledge" on processes that are unstructured and changeable (Yip et al, 2015). When capturing knowledge on structured processes, an organisation will identify the knowledge assets, inventories and the knowledge workers within various organisational units. On the other hand, knowledge from unstructured business processes helps identify knowledge networks, relevant stakeholders and cross functional activities within the organisation.

Literature Review

Literature on KM emphasises the importance of KAs, but there is no unanimously endorsed methodology or framework for conducting KAs. However, the common elements in most of the methodologies presented in literature are the analysis of the organisation's knowledge inventory, knowledge needs and knowledge flows. The final step is the knowledge mapping, which identifies the sources of explicit and tacit knowledge in the organisation, the knowledge roles and expertise within the organisation, bottlenecks in the flow of information and opportunities to exploit existing knowledge for the achievement of the organisational goals. The outcome of the KA process is a detailed KA report which would serve as a guiding document for the development of the organisation's KM strategy (Pa, Taheri and Abdullah, 2012 and Perez-Soltero, Barcelo-Valenzuela, Sanchez-Schmitz, Martin-Rubio and Palma-Mendez, 2006).

According to Choy, Lee and Cheung (2004), the KA methodology comprises three phases, namely, the pre-audit preparation, in-audit process and post-audit analysis. The pre-audit process focuses on culture assessment and KM awareness. The in-audit process entails "structured interviews to capture process-critical knowledge". Lastly, the post-audit analysis includes knowledge inventory, knowledge maps and knowledge flow analysis. The notable difference between this methodology and the other KA methodologies adopted by most organisations is the pre-audit preparation phase which pays special attention to culture assessment and KM awareness. In most cases culture issues are incorporated into all phases of the KA methodology instead of separately.

On the other hand, Kumar (2013) is of the view that KA generally comprises four key components, namely, the knowledge need analysis, knowledge inventory analysis, knowledge flow analysis and lastly, knowledge mapping. At the knowledge need analysis stage, the organisation identifies the current and future knowledge needs that will enable it to achieve its performance targets. The knowledge inventory analysis entails identifying the knowledge assets and resources that are existent within the organisation at the time of the audit. Identifying the location of the knowledge assets and resources is important at this stage. The knowledge flow analysis looks at people, processes and systems to determine how knowledge flows within the organisation. During this phase, the knowledge gaps and constraints that may need to be addressed in future and are also identified. Knowledge mapping, which is the last phase of the KA process, entails a schematic representation of the knowledge resources and assets as well as the knowledge flow within the organisation. However, this KA methodology, which has been widely adopted by most organisations, has been found wanting in certain areas. As pointed out by Ganasan (2011), this methodology does not provide recommendations on the appropriate KM strategy to be undertaken based on the outcomes of the KA process nor "include the development of a knowledge network analysis to understand the knowledge acquiring methods" (Ganasan, 2011).

In response to the limitations identified in most of the KA methodologies, Ganasan (2011) proposed a 6-stage knowledge audit model which would enable organisations to measure the risks and opportunities associated with their state of knowledge and address the identified gaps. The proposed methodology also recommends tools to be used at every stage of the process. The six stages of the proposed model are: assessing the organisational strategic information and culture, obtaining and prioritizing organisational core processes, measuring the current knowledge health, knowledge audit reporting, recommendations of knowledge management strategies and continuous knowledge re-auditing. The key contributions of this proposed KA model is the analysis of the how well knowledge is used to achieve the organisational goals and the emphasis on continuous knowledge re-auditing. This reaffirms the importance of conducting KA frequently in response to the changing knowledge needs.

Jafari and Payani (2013)'s proposed systematic approach to KA comprises six (6) steps which are: identifying organisation's knowledge objectives, identifying organisation's experts, identifying organisation's knowledge documents, determining organisation's enjoyment of knowledge, determining knowledge importance and auditing organisation's knowledge situations. The proposed methodology helps identify the current state of knowledge in organisations and suggests solutions to achieving/ reaching the desired state. Similar to most KA methodologies, the first step is about identifying the level of knowledge required to achieve the organisation's objectives and vision. Steps 2 and 3 of Jafari and Payani (2013)'s KA methodology entail the identification of tacit and explicit sources of knowledge sources. Unlike other methodologies which focus on both tacit and explicit sources of knowledge during the inventory analysis phase, this methodology deals with the two types of knowledge sources separately (Tacit sources at steps 2 and explicit sources at step 3).

The fourth (4th) step, which is different from the phases and activities outlined in most of the KA methodologies is about determining the use, impact and benefits of the identified tacit and explicit sources of knowledge to the organisation. This stage looks at how knowledge from the experts is transferred/shared with other employees within and outside the organisation as well as how the knowledge acquired by the organisation is benefitting (or has benefited) the organisation. This is one of the key contributions to literature on KA as it emphasises the value and significance of knowledge in organisations. Step 5 entails determining the importance of available knowledge in relation to the achievement of the organisation's knowledge objectives and vision as well as prioritising it accordingly. The criteria for identifying knowledge importance is according to financial, customer, internal, learning and growth perspectives.

The last step (step 6) of Jafari and Payani (2013)'s proposed systematic approach to KA is an assessment of an organisation's knowledge fields in critical, desirable, saving and non-critical areas. An organisation's critical area is the one that must be given first priority for the organisation to improve. The knowledge fields in the desirable area have a desirable situation while those in the saving area can be "promoted to the desirable situation by making the appropriate strategies". The non-critical area is unimportant and should not be focused on (Jafari and Payani, 2013).

The NSG's Knowledge audit methodology

This section discusses the methodology that was followed by the NSG in conducting KA. A qualitative approach will be used to describe, discuss and analyse the NSG's KA methodology.

The KA undertaken at the NSG was aimed at identifying the current and future knowledge requirements of all the business processes and applicable knowledge sources that could fulfil those knowledge requirements. Additionally, it would serve as a launching pad for an effective, rational and well-planned KM strategy.

As outlined in the terms of reference for the project, the audit ought to answer the following questions:

- What are the NSG's knowledge requirements?
- What tacit and explicit knowledge assets does the NSG have and where are they?
- How does knowledge flow within and outside the NSG?

- What knowledge gaps exist in the NSG?
- How is the knowledge secured against potential loss?
- How do employees in the NSG keep their knowledge from becoming obsolete?

The KA exercise comprised five stages as outlined in the table below.

Table 1: NSG's KA methodology

KA stages/ phases	Activities	Deliverable(s)
1. Knowledge needs analysis	• Conduct a knowledge survey	• Survey analysis report
1. Knowledge inventory analysis	• Assess existing knowledge sources • Conduct individual interviews with key role players.	• A report from the individual interviews.
2. Knowledge flow analysis	• Undertake focus group discussions with all branches.	• A preliminary KA report incorporating inputs focus group discussions.
4. Knowledge mapping	• Develop a process map of what knowledge exists in the organisation.	• Knowledge map with: - a description of where knowledge exists and how it flows; and - a description of gaps and duplication in knowledge assets.
5. KA reporting	• Compile a detailed KA report • Circulate the report to staff	• KA report

Knowledge needs analysis
As a starting point, an online survey was conducted to determine the employees' views regarding the KM practices and at the NSG and determine their knowledge needs. The respondents' views on what KM is and what it is supposed to be were sought. The survey, which was circulated to all NSG staff, consisted of 20 multiple choice questions and took approximately five (5) minutes to complete. There was also provision for additional comments regarding additional knowledge requirements at the end of the survey. Included in the survey were also questions that were intended to determine the organisational culture in relation to KM.

The KM survey was easy and quick to administer and the response rate was satisfactory; with sixty nine percent (69%) responses received. Another benefit of an online survey is that it has a broader reach than other data collection techniques. Data obtained from the survey was analysed and taken into consideration in the subsequent phases of the KA process.

Knowledge inventory Analysis
After determining the knowledge needs and KM practices within the organisation, an assessment of existent explicit (documented) and tacit (experiential, relational and intangible) sources of knowledge was undertaken. Explicit sources of knowledge that were looked at included the corporate intranet, library, internet, statistical analyses, HR directory, emails, electronic systems, computer hard drives and official documents such as strategic plans, annual performance plans, corporate policies, standard operating procedures, cabinet statements.

To assess tacit sources of knowledge, employees within the organisation who possess extensive experience, competencies and information about the organisation were identified to participate in individual interviews. The objective of the interviews was to obtain information about the interviewees' roles, their sources of knowledge, knowledge needs as well as their interfaces with both internal and external stakeholders. Their views about the organisational culture and how KM could support their needs were also sought.

Key participants were identified that fit the following roles:

- Strategist: someone who understands the bigger picture
- Senior management: a visionary that can align the long term vision with the operational strategy
- HR Manager: someone that can convey the employee skills
- Marketer: an individual who understands the marketability of the products
- Information technologist: an individual with knowledge, skills and expertise of technology implementation

- Knowledge analyst: someone from any functional area who can integrate inputs
- Operations: Someone who understands the business of the NSG

Knowledge flow analysis
To obtain inputs from staff on how information and knowledge flow within the organisation, focus group discussions were held with employees across all organisational levels. To ensure branch representivity, individuals were selected from each branch to participate in the focus group discussions. To ensure unbiased feedback, an external facilitator was assigned to moderate the discussions.

Employees were grouped and allocated interview slots according to their job/ salary levels. There were three categories; namely, employees on salary levels 1 – 8 (Lower level staff), employees on salary levels 9 – 12 (Low and Middle Managers) and employees on salary levels 13 – 16 (Senior Managers).

Grouping employees according to their job/ salary levels gave a clear indication of the information and knowledge needs per organisational level. For instance, staff who are functioning at an operational level of the organisation required different information and knowledge from those at a strategic level. An element of organisational culture that was also a spin-off to grouping staff according to their job levels was that it enabled staff to freely express their views and frustrations in the absence of their supervisors.

The focus group discussions also sought to identify the knowledge gaps and appropriate interventions to improve efficiency. During the discussions, employees were requested to propose KM initiatives that could be implemented to address the identified knowledge gaps and prioritise them according their level of urgency. The proposed list of KM initiatives helped the KM unit identify the quick wins address the knowledge gaps.

The focus group discussions revealed inherent differences of the multidisciplinary teams and provided rich data on a holistic organisational level. They also delivered important links to additional stakeholders who were not initially identified. Focus groups proved to be efficient in terms of collection of detailed, rich data – which may not have been achieved with other data collection techniques. As supported by Carey and Asbury (2016), focus groups "provide context and perspectives that enable experiences to be understood holistically".

The results of the focus group sessions were documented and served as valuable resource to inform the development of the KM strategy.

Knowledge mapping
A knowledge map is a visual representation of the knowledge resources and assets as well as the knowledge flows within the organisation (Kumar, 2013).

Through knowledge mapping, an organisation is able to identify knowledge that exists at a given time, where that knowledge is located and how that knowledge circulates within the organisation. Furthermore, knowledge gaps and bottlenecks may be identified though the knowledge mapping processes.

Data collected from the inventory analysis and knowledge flow analysis phases is used to develop the knowledge maps.

KA reporting

The last phase of the audit process entailed the development of a detailed report on the outcomes of the assessment and dissemination of the report to staff. Included in the report were recommendations for KM unit on initiatives that needed to be implemented urgently as well as matters for consideration during the development of the knowledge management strategy.

The report was also circulated to all staff through emails and uploaded on the organisational knowledge hub. The outcomes of the KA were also presented at various structures within the organisation. Not only did the sharing of the report instil the sense of ownership among staff; it also reaffirmed their contribution to the achievement of the organisational goals.

Comparative Analysis of NSG's KA Methodology

This section presents a comparative analysis of the NSG's KA methodology against various KA methodologies discussed in KM literature.

The NSG's KA methodology can be located within the three phases of the KA methodology described by Choy *et al* (2004), namely, pre-audit preparation, in-audit process and post-audit analysis. The notable difference between these two methodologies is the emphasis placed on culture assessment and KM awareness in the pre-audit phase of Choy *et al* (2004)'s methodology. While some of the questions that were included in the NSG's KM survey were aimed at assessing KM awareness and the employee's views on the organisational culture, those elements were note considered as specific activities within the KA process. The other difference is in terms of the sequence of activities. Knowledge inventory analysis is the second (2nd) phase after the knowledge needs analysis in the NSG's KA methodology while in Choy *et al* (2004)'s methodology, it is the third activity and part of the post-audit analysis. Also, contrary to the NSG's KA methodology, knowledge mapping precedes the knowledge flow analysis in the KA methodology described by Choy *et al* (2004).

The phases outlined in the NSG's KA methodology are similar to the one described by Kumar (2013) as discussed in section 3 of this report. However, Kumar (2013)'s KA methodology does not include KA reporting. The last phase of Kumar (2013)'s methodology is knowledge mapping. In the NSG's KA methodology, KA reporting is treated as a separate phase because it goes beyond the development of the report – it includes the sharing of the outcomes of the KA process through various communication channels within the organisation.

In comparison with the 6-stage knowledge audit model proposed Ganasan (2011), the NSG's KA methodology did cover some of the objectives outlined in the stages of Ganasan (2011)'s model such as knowledge reporting, identification of tacit and explicit sources of knowledge and provision of recommendations for the KM strategy based on the outcomes of the audit. The NSG's KA model also identified critical knowledge for achievement of the organisational goals as well as the tacit and explicit sources of that knowledge. However, it did not measure the impact of the knowledge management processes in relation to the achievement of the organisational goals. Even though knowledge re-auditing is not included in the NSG's KA methodology, the organisation supports the notion of conducting KAs on a regular basis.

While there are similarities between the objectives of phases 1, 2 and 3 of the NSG's KM methodology and those of steps 1, 2 and 4 of Jafari and Payani (2013)'s proposed systematic approach to KA, there are distinct differences that are worth noting. Jafari and Payani (2013)'s KA methodology does not include knowledge mapping and KA reporting but has the following steps instead which are not included in the NSG's KA methodology: determining organisation's enjoyment of knowledge, determining knowledge importance and auditing organisation's knowledge situations. Unlike the NSG's KA methodology which only focuses on identifying the tacit and explicit knowledge sources and analysing the flow of knowledge, Jafari and Payani (2013)'s KA methodology goes further to determine the impact of knowledge within the organisation and prioritises knowledge according to its level of importance.

Conclusion and Recommendations

The KA undertaken at the NSG provided valuable information on the status of KM within the organisation and assisted the KM unit in identifying the knowledge needs and gaps that needed to be addressed. The spin-off of the KA process was that it encouraged information and knowledge sharing across various organisational units and boosted employee morale as each contribution was acknowledged and captured. Furthermore, there was a sense of comradeship as staff members realised that they had similar knowledge needs and views as far as the role of KM in the organisation is concerned.

Despite the notable similarities and differences between the KA methodology and other KA methods discussed in KM literature, most of the KA methodologies have similar activities. While the methodology that was followed by the NSG to conduct the KA did achieve its intended objective, there is a need to pay special attention to the benefits and value of knowledge in organisations. The value of knowledge in the organisations will only be realised if it contributes to the organisational growth, productivity and efficiency, financial benefits and market development. Through their proposed systematic approach to KA, Jafari and Payani (2013) have made a valuable contribution to literature on KA by providing a useful guideline on how incorporate the value of knowledge into KA. The proposed methodology also provides solutions for achieving/ reaching the desired state with regard to organisational knowledge.

While the choice of the KA methodology lies solely with the organisation, the following recommendations are made in terms of conducting KAs in public sector organisations:

(i) Conduct KAs as regularly to adequately respond to the ever-changing knowledge requirements;
(ii) Clearly define the objectives of the audit at the beginning of the project and communicate them to staff;
(iii) Involve all staff to ensure the richness of data and obtain views from all levels of the organisation. Also disseminate the outcomes of the audit throughout the organisation to promote ownership and commitment to the KA process;
(iv) Be cognisant of the organisation culture when deciding on the KA methodology. Customise the methodology and activities to suit culture of the organisation.

References

Carey, M.A. and Asbury, J.E., 2016. *Focus group research*. Routledge.

Choy, S.Y., Lee, W.B. and Cheung, C.F. 2004. A Systematic Approach for Knowledge Audit Analysis: Integration of Knowledge Inventory, Mapping and Knowledge Flow Analysis. *J. UCS*, *10*(6), pp.674-682.

Du Toit, A.S. 2014. Conducting a knowledge audit at a South African retail bank. *Acta Commercii*, *14*(1), pp.1-6.

Ganasan, A., 2011, November. Knowledge audit made comprehensive thru 6 stages. In *Research and Innovation in Information Systems (ICRIIS), 2011 International Conference on* (pp. 1-6). IEEE.

Gourova, E., Antonova, A. and Todorova, Y. 2009. Knowledge audit concepts, processes and practice. *WSEAS Transactions on Business and Economics*, *6*(12), pp.605-619.

Jafari, A. and Payani, N., 2013. A systematic approach for knowledge auditing. *African Journal of Business Management*, *7*(32), p.3159.

Kumar, A., 2013. Knowledge Audit: Its Learning Lessons.

Levy, M., Hadar, I., Greenspan, S. and Hadar, E., 2010. Uncovering cultural perceptions and barriers during knowledge audit. *Journal of Knowledge Management*, *14*(1), pp.114-127.

Pa, N.C., Taheri, L. and Abdullah, R. 2012. A Survey on Approaches in Knowledge Audit in Organizations. *Asian Transaction on Computers*, *2*(5), pp.1-8.

Ragsdell, G., Probets, S., Ahmed, G. and Murray, I., 2014. Knowledge audit: findings from the energy sector. *Knowledge and Process Management*, *21*(4), pp.270-279.

Rahman, A.A. and Shukor, N.S.A. 2011. Knowledge audit process-tales of two organizations. In *Research and Innovation in Information Systems (ICRIIS), 2011 International Conference on* (pp. 1-5). IEEE.

Serrat, O. 2008. Learning lessons with knowledge audits.

Yip, J.Y., Lee, R.W. and Tsui, E., 2015. Examining knowledge audit for structured and unstructured business processes: a comparative study in two Hong Kong companies. Journal of Knowledge Management, 19(3), pp.514-529.

AVAILABILITY, AWARENESS AND USE OF E-LIBRARY SERVICES FOR ENTREPRENEURSHIP SKILLS DEVELOPMENT AMONG SELECTED RURAL YOUNG ADULTS IN LAGOS STATE, NIGERIA

Olefemi Owojuyigbe
Chief Technologist
Yaba College of Technology,
Yaba, Nigeria

Adefunke Fadimu
Librarian I
Yaba College of Technology,
Yaba, Nigeria

George Onyenania
Librarian I
Yaba College of Technology,
Yaba, Nigeria

and
Ayodeji Owojuyigbe
Librarian I
Yaba College of Technology,
Yaba, Nigeria

Abstract

Present day society is increasingly embracing the development and use of e-library services in meeting information needs irrespective of location for self-reliance and nation building. Entrepreneurship skills development is required to achieve self-reliance. Thus, the study investigated "availability, awareness and use of e-library services for the development of entrepreneurship skills among rural young adults in Lagos State". The study aimed to ascertain the level/extent of Availability, Awareness and Use of E-library Services for Entrepreneurship Skills Development among Selected Rural Young Adults in Lagos State, Nigeria. Descriptive survey design was adopted targeted at rural young adults studying at the Yaba College of Technology, Epe Campus in Lagos State rural community. Purposive/availability sampling techniques and researchers' adapted questionnaire were used. Complete data collected from 48 respondents were analysed using Means and Standard Deviation to answer the study research questions; while Pearson Product Moment Correlation (PPMC) analysis via SPSS version 20.0 was used to test formulated hypothesis. Findings showed that *there was low level of e-library services availability, awareness and use among rural young adults in Lagos State for entrepreneurship skills development resulting from several factors such as inadequate e-library services availability and awareness creation, poor infrastructural development, poor power supply and lack of interest in entrepreneurship skills/use of available e-library services on the part of rural young adults in the state majorly due to get rich quick syndrome among them. The study also found positive linear relationships that exist between availability, awareness and use of e-library services for entrepreneurship skills development among rural young adults. The study concludes that when the level of e-library services availability and awareness is high, there will be corresponding increase in their use among rural young adults in Lagos State for entrepreneurship skills development; and therefore recommends that all stakeholders should look towards developing and improving on e-library services provision to rural young adults to harness the dividends of entrepreneurship skills not only in the state but across African countries being classified as the5thlargest economic hub in Africa.*

Keywords: *E-Library, Entrepreneurship Skills, Young-Adults, Lagos-Nigeria.*

Introduction

The concept of e-library services, availability, awareness and use is of growing concern among nations of the modern world wishing to succeed through Entrepreneurship development. Entrepreneurship development is an important factor in nation building. Nations with large economies across the globe including African countries are those that can boast of their economic potentials. Thus, the success and failures of every nation's economy largely dependents on the level of skills demonstrated by her citizenry in which entrepreneurship skill (s) is a key factor.

Entrepreneurship Skills are two different concepts. Entrepreneurship may be considered as business knowledge and practices aimed to earn a living. It involves innovation, creativity, competency, risk taking and self-reliance (Ugwu, 2012). To her, entrepreneurship is the process of discovering, evaluating and exploiting opportunities which go on to show themselves in the form of new business ventures thereby deriving personal satisfaction, monetary rewards and independence with the capacity of transforming any nation's economy.

Skills on the other hand, is the ability to do something well (Oxford Advanced Learner Dictionary, 2010). Therefore, it could mean special abilities possessed by an individual in the production of goods or services capable of satisfying societal needs upon which he or she can earn a living in form of small and medium scale enterprises (SMSEs). Thus, today there is global emphasis on the development of small and medium scale enterprises which can only succeed if it is bed-rocked on strong entrepreneurial skills (Ugwu, & Ezeani, 2012). Hence viable nations across the globe such as America, China and India take issues of entrepreneurship skills with ultimate concern. Of recent, Americans surveyed 5,000 citizens on “Adult Skills” including those relating to Entrepreneurship that would allow for deeper insights into skill issues affecting unemployed adults (ages 16–65), young adults (ages 16–34), older adults (ages 66–74), and incarcerated adults (ages 16–74) with the view of enhancing her economic development by improving their entrepreneurship skills needed for success in the 21st-century global economy (Organisation for Economic Co-operation and Develop

The acquisition of entrepreneurship skills to a large extent determines not only the degree at which such individuals could be self-sufficient but at which her nation is rated in terms of civilization, growth/development. The general struggle of every nation to be visible in such rating is dependent on the amount of information at her disposal particularly now that emphasis is no longer on the amount of mineral or natural deposits available to a nation but on the amount of knowledge/skills available to tap and utilize them as Jones (2011) noted that students’ among other young adults’ skills are well below expected levels for successful living.

This phenomenon in recent time has often been referred to as knowledge based economy driven by the interplay of information availability, awareness and use since information has variously be described as power for economic growth/development in which the adoption of appropriate learning strategies/facilities such as Information and Communication Technology (ICT) upon which e-library operates. Libraries, be it modern (e-library)/conventional phases are agents of social communication instituted to bridge information gap among members of the society/community they serve/influence (Ifijeh, Iwu-James, Adebayo, 2016).

In the statement of the American Library Association—Office for Information Technology Policy – (OITP, 2015), modern Libraries with their rich information resources, skilled staff, and distributed physical locations are prime venues to advance entrepreneurship/sustain a more mobile workforce. A number of e-libraries are already engaged in promoting entrepreneurship in their communities; and are therefore considered as One-Stop partners eligible for entrepreneurship skills training.

E-Library symbolizes the conventional library in the virtual environment capable of running 24 hours’ services on daily basis; open to flexibility and diverse E-learning environment. E-library can therefore be seen as “an evergreen tree of knowledge source” since its services is 24/7 unlike the conventional library system that has opening and closing hours of services thereby disrupting the information flow process at intervals. Thus, e-library services were described as activities that libraries and their personnel render to meet the information needs of their users electronically; and that satisfactory services cannot be provided unless the views of users are considered (Joy & Idowu, 2014) which partly forms the bases of this work. Moreover, Owino (2013) explained that there is little systematic research into the overall effectiveness of e-library services as a learning medium despite the great interest in it. He acknowledges that e-library services aimed at making sustainable development a reality especially on how it can reach thousands if not millions of minds and potentially plant the seeds of change. These potential seeds of change include: e-library engagement in Entrepreneurship skills development/promotion irrespective of location particularly in rural communities where lay in waste natural opportunities, vast arable land space for African's economic transformation through Agricultural practices and Allied Companies if properly harnessed in form of availability, awareness and use.

Availability on the other hand, refers to the presence of required data, idea/knowledge (evergreen tree of knowledge source: e-library) necessary for the satisfaction of an individual's information needs; while awareness is the individual's consciousness of such non-stop data flow, idea/knowledge rooted in e-library for the purpose of use, growth and development via entrepreneurial skills.

The interplay of these all important variables seems to be a misplaced priority among African countries including Nigeria in which Lagos State is though described as the 5th largest economic hubs in Africa in recent times, is recording increased rate of unemployment, poverty (measured to be 57.8% by the National bureau of statistics in 2004; cited by Ugwu, 2012) which undoubtedly has been on the increase due the present day economic recession situation of the country in form of hunger, suffering, robbery, kidnapping, suicide among other social vices that recently characterized the living style of her people irrespective of the present Governors efforts to check economic and security challenges. Thus, the study investigated "Availability, Awareness and Use of E-library Services for Entrepreneurship Skills Development among Selected Rural Young Adults in Lagos State".

Statement of the Problem

African countries have long been described as either developing or underdeveloped nations of the world irrespective of their favourable geographical location full of valuable natural resources as many of her citizens live in poverty and characterized with unemployment, poverty, hunger, suicide, kidnapping, vandalization of oil pipe lines, robbery and other social violence due to one form of deficiency or the other. This circumstances may be attributed to lack of required skills to tap and harness them for her overall growth and development as Jones (2011); Joy and Idowu (2014) expressed that students among other young adults' skills for successful living are well below expected levels; and that satisfactory services cannot be provided unless the opinion of users are investigated when considering the massive impact of ICT landscapes such as the e-library that is changing the way of modern information seekers in the electronic environment. Could this deficiency among others observed of Africa Nations and her young adults in particular be due to inadequate entrepreneurship skills development or availability and use of necessary information resources/services? This phenomenon as a matter of urgency, requires empirical evidence if the future of Africa is of any importance to us. Thus, the study investigated the Availability, Awareness and Use of E-library Services for Entrepreneurship Skills Development among Selected Rural Young Adults in Lagos State".

Aims and Objectives of the Study

The main aim/objective of the study is to find out the Availability, Awareness and Use of E-library Services for Entrepreneurship Skills Development among Selected Rural Young Adults in Lagos State, Nigeria. Its specific objectives are:

i. To find out the extent of e-library services availability for use among rural young adults in Lagos State.
ii. To determine the level of awareness of e-library services among rural young adults for entrepreneurship skills development.
iii. To ascertain the extent of e-library services use among rural young adults for entrepreneurship skills development.
iv. To establish the relationship that exist between availability, awareness and use of e-library services for entrepreneurship skills development among rural young adults.
v. To find out factors challenging the use of e-library services among rural young adults for entrepreneurship skills development.

Research Questions

i. To what extent is e-library services available for use among rural young adults in Lagos State?
ii. What is the level of e-library services awareness among rural young adults for entrepreneurship skills development?
iii. To what extent is e-library services used among rural young adults for entrepreneurship skills development?
iv. What are the factors challenging the use of e-library services among rural young adults for entrepreneurship skills development?

Research Hypothesis

$H_{o1:}$ Significant relationship does not exist between availability, awareness and use of e-library services for entrepreneurship skills development among rural young adults.

Scope of the Study

The study was limited to Rural Young Adult Students studying at the Yaba College of Technology, Epe Campus (in a Rural Community) of Lagos State, Nigeria; being that public e-library services development by the state government is still at the infancy stage. This means that others studying in the Main Campus at the City Area of Lagos State and institutions were not included. Respondents were Young Students in the Department of Agricultural Technology and those in Leisure and Tourism because the researchers believed that as young adult students in the rural community, who have been described as digital natives/addictive to ICT Facilities usage, would be able to supply required information in relation to the study objectives coupled with the fact that the College library also offer e-library service to her user community irrespective of location. Besides, the researchers were concerned with issues relating to Availability of e-library Services, Awareness and use in the development of entrepreneurship skills; as well as challenging factors.

Literature Review

E-library Services Availability and Entrepreneurship Skills Development

E-libraries are particularly attractive workplace platforms/partners. The availability of E-Libraries with their rich information resources, skilled staff, and distributed physical locations is becoming prominent in many nations across the globe; becoming prime venues for entrepreneurship skills advancement, and sustaining a more mobile workforce. A number of modern libraries otherwise known as e-libraries are in existence; and already engaged in promoting entrepreneurship in their communities through their e-based contents in form of available databases developed by itself or on subscription meant to facilitate knowledge growth and societal advancement (American Library Association-Office for Information Technology Policy - OITP, 2015).

The Association explained that: in addition to educational and learning opportunities that equip young people to begin a career, modern libraries also directly contribute to workforce and economic development. Many e-libraries serve as centres to establish, sustain, and promote small scale businesses or Entrepreneurship with longer hours than other community organizations, better technology access and training, and the ability to be engaged in employment-related activities.

E-library Services Awareness, Use and Benefits for Entrepreneurship Skills Development

Awareness of e-library services for the purpose of Information/knowledge building towards entrepreneurship skills development are essential to modern users for economic advancement. The relationship that exists between users' awareness of information existence, use and benefits for self/national development have been traced in many studies especially now that global development of e-libraries has generated changes in the pattern of library routines/services with significant effect on modern users' exploration of electronic collections for self-skills' development aimed at earning a living independently (Saravanan, Kalaivani, & Senthilkumar, 2012).

To this end, Achonna (2008) found that there exists low level of e-resources usage among undergraduates; while Ifijeh, Iwu-James, Adebayo (2016)found low level of awareness among users of e-libraries in Nigeria which has been highly benefiting to developed nations even outside the formal learning environment as follows:

(a) In Chile, the National e-library Literacy Campaign was launched with the goal of training 500,000 Chileans in the use of electronic based libraries and other ICT features in 2005 via a network of over 300 public e-libraries. The training helped Chileans launch businesses, navigate market information/develop technology skills to improve their entrepreneurship skills and competitiveness particularly in setting realistic entrepreneurship goals in clearly/achievable manner/procedures on entrepreneurship skills development; including how to create business without formal expertise/training; initiative, imagination, community/people services obligations; management skills/strategies to overcoming economic uncertainties to gain competitive advantage.
(b) In the United States, e-libraries of various types are providing e-book/journal contents to borrowers to ensure that all Americans continue to have access to commercially produced content through their local public libraries.
(c) In South Africa, public libraries provide space for information kiosks and tele-centres for information access towards nation building via entrepreneurship skills development independently outside the formal learning environment.
(d) In Sunderland, England, public libraries provide free access to PCs alongside training for adults and children users on how best to harness e-library contents for self-development in all fields of interest including entrepreneurship skills creativity/development.

Ugwu (2012) remarked that the absence of creativity/entrepreneurial competencies among young adults' school leavers is an impediment to sustainable development which if not tackled, will continue to incite/increase the incidences of unemployment among Nigerians. When such opportunities are lacking and access to social services limited, undoubtedly, living standards will continue to be low. Onuegbu (2007) examined vocationalization of education in enhancing entrepreneurship skills for living; and found that entrepreneurship ability is a reckoning force towards economic self-reliance; providing the right attitude, appropriate skills acquisition, competency, ability to recognize business opportunities; and that young adults of vocational/technical background, will not only become self-reliant economically, but employers of labour.

IFLA (2014) expressed that about 250,000 people find jobs/entrepreneurship opportunities through their public e-libraries in the European Union each year, enhance the use of enabling technologies/promote women empowerment. Thus, the National Library of Uganda has an ICT training program designed for female farmers, providing access facilities to weather forecasts, crop prices/set up online markets. This programme increases the economic well-being of women through technology/e-library use skills (IFLA, 2012 & 2013) thereby reducing poverty. In Romania, librarians trained by Biblionet helped 100,000 farmers via e-library service to get US $187 million subsidies via new Internet/computer services in 2011-2012. The trained 1,000+ librarians decided to bring the services to their libraries together with local mayors who understood that this service is in the farmers' interest. The programme helped farmers learn how to use e-libraries to access financial forms/submit them to government thereby saving time and money (IREX 2013), expressing that Librarians, via e-library services Improve Farmers' Livelihoods in Romania.

The roles/benefits of entrepreneurship are many and varied, but most importantly it serves as an alternative when paid employment cannot be secured (Ugwu, 2012). Thus, increasing per capita output/income and stimulating investment interest in new ventures towards achieving self -reliance and poverty eradication.

Factors Challenging Use of E-Library Services in Rural Communities

Nigerian government at all levels does not take issues of entrepreneurship skills development seriously. Hence her labour market is over flooded by unemployed youths waiting in waste for white collar jobs in the presence of wide array of untapped entrepreneurship/economic opportunities staring on their faces due to required skills deficiencies. Thus, Okwuanaso (2000) expressed that many youths who go into entrepreneurship fail because of their little knowledge of what it takes to effectively manage a business. Igbeka (2008) explained that development plans in Nigeria does not adequately contain issues in entrepreneurship development and practical ICT/e-library usage leading to gross entrepreneurship skills deficiencies among Nigerian youths both in school and those who have passed out.

Consequently, young adults in Nigeria lack managerial skills, marketing capability/financial resources that often derail their encouragement/motivation to start a new business/implementation of new ideas; and how to interface with necessary entities, such as banks, suppliers/customers, venture capitalists/distributors and advertising agencies (Omoankhanlen, 2010); lack of entrepreneurial spirit/culture, lack zeal to try their hands on self-employment, lack adequate support/motivation/financial assistance from parents, guardians/government and lack confidence/determination to go into entrepreneurship for fear of competition/failure.

Gbaje (2011) pointed out non-availability of indigenous databases which makes it difficult in having access to quality information in the Nigerian context for the purpose of entrepreneurship skills development. Others are: Epileptic power supply/non-availability of online databases, low bandwidth, inadequate digital devices to access e-library resources, Network problems, Lack of access skills to digital information resources in both local/foreign databases, Lack of formal training on ICT use, Server slowness, Frequent systems breakdown, lack of maintenance culture, inflation/high interest rates and lack of infrastructure among others (Achonna, 2008;Urhiewhu, Okeke, & Nwafo, 2015).

From the foregoing, it appears no study has considered the influence neither the relationship that exists between "Availability, Awareness and Use of E-library Services for Entrepreneurship Skills Development Among Rural Young Adults in Lagos State.

Methodology

Descriptive survey/correlational research design was adopted for the study in order to establish relationships between the variables. Study population consisted of 191 ND I & II young adult students in the rural community of Epe who are in Agricultural Technology and Leisure/Tourism Departments of the Yaba College of Technology, Epe Campus, Lagos State-Nigeria. Study Sample size was placed at 30% representing 57 respondents approximately; while purposive and availability sampling techniques were used in the administration of validated Questionnaire titled: Availability, Awareness and Use of E-library Services for Entrepreneurship Skills Development Questionnaire' (AAUELSESDQ) adapted from Ugwu (2012).

A pilot study was equally conducted. The researchers through friends'/research assistants, administered 10 copies of the questionnaire to students in the community who were on NOUN (National Open University of Nigeria) programmes but usually have access to e-library services in the community but were not part of the main study. Collected data were subjected to Cronbach's alpha reliability analysis that yielded reliability coefficient $\alpha = 0.85$ approximately. However, out of 57 copies of the administered Questionnaire to respondents, 48 copies were filled/returned which represents 84.2 % Response rate. Data collected were analysed through descriptive statistics, especially for research questions; while the study hypothesis was tested using Pearson Product Moment Correlation (PPMC) analysis of relationship for the study variables via SPSS, version 20.0.

Data analysis and Results

Analysis of Data According to Research Questions and Hypothesis.

Research Questions I: To what extent is e-library services availability for use among rural young adults in Lagos State?

Table 1: E-Library Services Availability Statements N = 48

Questionnaire Items	Mean	SD	Decision
1. My institution provides e-journal services for entrepreneurship skills development through Ebsco-Host database subscription.	2.57	0.953	Accept

2. Availability of e-journal services for entrepreneurship development through Elsevier Science Direct database subscription	2.51	0.789	Accept
3. JSTOR database services for 24/7 to journals on entrepreneurship development.	2.94	0.733	Accept
4. Availability of Myilibrary subscribed database services to e-books on entrepreneurship skills development.	2.50	0.859	Accept
5. Availability of e-library services to Institutional Repository/IR on Theses/Dissertations, Projects & Seminar/Conference Papers on entrepreneurship skills development.	1.21	0.488	Reject
Overall Mean Ratings	**2.35**	**0.724**	

Key: VH = Very High, H = High, L = Low, VL = Very Low, M= Mean, SD =

Standard Deviation.

Results on Table 1shows that the overall mean rating of E-library service availability is Low (M = 2.35) based on the cut-off point of 2.5 on a scale of 4 Likert scale type. Specifically, it indicates that the mean ratings of item 1, 2, 3, 4 are relatively high, but very low on item 5with the respective Mean of: 2.57, 2.51, 2.94, 2.50, and 1.21. Based on the cut-off point of 2.5, E-library service availability rating for items 1, 2, 3, and 4 were accepted, indicating that their institution provides e-journal services for entrepreneurship skills development through Ebsco-Host database subscription, as well as through Elsevier Science Direct database, JSTOR and Myilibray. However, item 5 was rejected by the respondents showing that there is no availability of e-library services to Theses/Dissertations, Projects & Seminar/Conference Papers (Institutional Repository) on entrepreneurship skills development.

Research Questions II: What is the level of e-library services awareness among rural young adults for entrepreneurship skills development?

Table 2: E-Library Services Awareness Statements N = 48

Questionnaire Items	Mean	Std. D	Decision
1. I became aware of e-library services for entrepreneurship skills development via the general courses (GNS 101) offered.	2.85	0.684	Accept
2. Through reading and public lectures.	2.06	0.633	Reject
3. Through the media.	1.52	0.499	Reject

4. Through departmental courses offered.	2.60	0.707	Accept
5. Through relationship with friends.	2.65	0.984	Accept
Overall Mean Ratings	**2.34**	**0.761**	

Key: Very High, High, Low, Very Low, M= Mean, SD = Standard Deviation.

Results from Table 2, on average, shows that:E-library service awarenessamong rural young adults for entrepreneurship skills development is Low, with the overall meant rating of 2.34 and SD of 0.761based on the cut-off point of 2.5. Specifically, it indicates that the mean ratings of items 1, 2, 3, 4, and 5 are 2.85, 2.06, 1.52, 2.60, and 2.65 with corresponding SD of 0.684, 0.633, 0.499, 0.707 and 0.984. Based on the cut-off point of 2.5, E-library service awareness rated items 2, and 3 were rejected. However, items 1, 4 and 5 were accepted by the respondents, indicating that they became aware of e-library services for entrepreneurship skills development via the general course (GNS 101) offered, through departmental courses offered and relationships with friends.

Research Questions III: To what extent is e-library services used among rural young adults for entrepreneurship skills development?

Table 3: Statements on E-Library Services Use for Specific Aspects of Entrepreneurship Skills Development. N = 48

Questionnaire Items	Mean	Std. D	Decision
1. It provides me with information on clear, realistic and achievable goals/procedures on entrepreneurship development.	1.15	0.412	Reject
2. I use it as source of information on how to bother/acquire more knowledge during progress or failure in business to gain competitive advantage.	1.44	0.681	Reject
3. As source of information on how to create business without formal entrepreneurship skill expertise/training.	1.94	0.522	Reject
4. As source of information on the acquisition of entrepreneurship initiative, imagination, skills & creativity.	2.56	0.836	Accept
5. On how to establish business/render services to people and succeed.	1.54	0.824	Reject
6. Source of information on organizational abilities with efficient management skills.	2.52	0.635	Accept

7. Source of overcoming economic uncertainties/high probability of failure in entrepreneurship.	2.51	0.672	Accept
8. Used as a knowledge source for best ways of supporting government/community for successful business environment.	2.62	0.846	Accept
9. Assource for best ways of personnel management in entrepreneurship.	1.94	0.755	Reject
10. Source on how best to reap huge financial reward/become self-reliant.	1.92	0.679	Reject
Overall Mean Rating:	**1.86**	**0.604**	

KEY: Very High Extent, High Extent, Low Extent and Very Low Extent, M= Mean, SD = Standard Deviation.

It could be observed from Table 3, that the overall mean score of all the variables under consideration clustered around 1.86, while standard deviation is 0.604. Based on the cut-off point of 2.50, the level of e-library services use for entrepreneurship skills development among rural young adults in Lagos State is low. Specifically, it reveals that the mean ratings ofitems1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 are 1.15, 1.44, 1.94, 2.56, 1.54, 2.52, 2.51, 2.62, 1.94, and 1.92 with corresponding SD of 0.412, 0.681, 0.522, 0.824, 0.635, 0.672, 0.846, 0.755 and 0.679. Based on the cut-off point of 2.5, respondents level of e-library services use ratings for specific aspects of entrepreneurship skills development on items 1, 2, 3, 5, 9, and 10 was Low (Rejected). However, items 4, 6, 7 and 8 were high (accepted) by respondents.

Research Questions IV: What are the factors challenging the use of e-library services among rural young adults for entrepreneurship skills development?

Table 4: Factors Challenging Availability, Awareness and Use of E-library Services for Entrepreneurship Skills Development Scale. N = 48

Questionnaire Items	Mean	Std. D	Decision
Factors on Availability Challenges			
1. Inadequate qualified librarians with suitable professional (e-library services) experiences/support.	1.69	0.519	Reject
2. Institutional Inadequate ICT facilities/training for e-library services delivery on entrepreneurship skills	2.56	0.636	Accept
3. Irregular e-library services needed for entrepreneurship skills development	2.55	0.651	Accept
Factors on Awareness Challenges			

4. Poor awareness programme on the availability of e-library services for entrepreneurship skills development	2.90	0.815	Accept
5. Poor power supply to use e-library services access devices in the rural community.	2.73	0.767	Accept
6. College e-library services enlightment do not prepare young adults for entrepreneurship skills development.	1.87	0.545	Reject
Factors Challenging the Use of E-Library Services			
7. Rural young adults are more interested in paid employment & so do not want to develop entrepreneurship culture/skill via e-library services.	2.69	0.624	Accept
8. Difficulty in securing financial support necessary to start a business venture.	2.59	0.796	Accept
9. The zeal to get rich quickly do not allow rural young adults to acquire entrepreneurship skills.	2.53	0.526	Accept
10. Many lack self-confidence/encouragements thereby afraid of failure and thus do not bother about developing entrepreneurship skills.	2.98	0.799	Accept
Overall Mean Rating:	**2.62**	**0.668**	

KEY: Strongly Agree, Agree, Disagree and Strongly Disagree, Mean and Standard Deviation.

Table 4: Results on table 4 shows that the average factors challenging availability, awareness and use of e-library services for entrepreneurship skills development scale among rural young adults is high, with the overall meant rating of 2.62 and STD of 0.668 based on the criteria mean of 2.50. The data shows that the mean ratings of items 1, 2, 3, 4, 5, 6, 7 8, 9, and 10 are 1.69, 2.56, 2.55, 2.90, 2.73, 1.87, 2.69, 2.59, 2.53 and 2.98 with corresponding standard deviations of 0.519, 0.636, 0.651, 0.815, 0.767, 0.545, 0.624, 0.796, 0.526 and 0.799. Based on the cut-off point of 2.5, factors challenging availability, awareness and use of e-library services for entrepreneurship skills development scale items are: 2, 3, 4, 5, 7, 8 and 10 were accepted indicating that Inadequate ICT facilities/training to support e-library services use, Irregular e-library services availability and zeal to get rich quickly do not allow rural young adults to pass through entrepreneurship skills development requirements. However, item 1, 6, and 9 were rejected by the respondents.

Testing of Hypothesis

H_0: Significant relationship does not exist between availability, awareness and use of e-library services for entrepreneurship skills development among rural young adults.
H_1: Significant relationship exists between availability, awareness and use of e-library services for entrepreneurship skills development among rural young adults.

Summary Table of Pearson Product Moment Correlation (PPMC) Analysis Correlation Test of Study Variables

Correlations

		Availability of E-Library Services	Awareness of E-Library Services	Use of E-Library services
Availability of E-Library Services	Pearson Correlation	1	.000	.000
	Sig. (2-tailed)		**.948****	**.634****
	N	48	48	48
Awareness of E-Library Services	Pearson Correlation	.000	1	.739*
	Sig. (2-tailed)	**.948****		.000
	N	48	48	48
Use of E-Library services	Pearson Correlation	.000	.739*	1
	Sig. (2-tailed)	**.634****	.000	
	N	48	48	48

Source: Authors'2017 Field Work/SPSS Output (Version 20)

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.05 level (2-tailed).

The correlation between Availability and Use of E-Library services has the coefficient of 0.634; indicating a strong positive linear relationship; with p-value of 0.000 at 0.05 level of significance, which is less than 0.05. The correlation between Awareness and Use of E-Library services has a correlation coefficient of 0.739; also indicating a strong positive linear relationship with a p-value of 0.000 at 0.05 level of significance, which is also less than 0.05. We therefore reject the null hypothesis and accept the alternate hypothesis and conclude that Significant relationship exist between availability, awareness and use of e-library services for entrepreneurship skills development among rural young adults.

Discussion and findings

Discussion of findings is done in paragraphs in line with the study objectives. Results obtained indicate that e-library services for entrepreneurship development among rural young adults in Lagos State is generally low; although they accepted that e-journal services through Ebsco-Host database subscription is made available to them as well as Elsevier Science Direct database, JSTOR and Myilibrary with the exemption of service provision to Theses/Dissertations, Projects & Seminar/Conference Papers on entrepreneurship skills development (IR). This low level of e-library services could be due to several factors such as poor infrastructural development/funding, lack of skills, and lack of formal training on ICT use. This result supports Ugwu (2012) who found Inadequate availability of digital contents and facilities in the training of library/information science students for entrepreneurship in three Nigerian universities.

Also, E-library service awareness among rural young adults in Lagos State for entrepreneurship skills development is equally Low. This could be attributed to inadequate awareness creation on e-library services existence for entrepreneurship skills development among rural young adults in Lagos State irrespective of their location. This is also in agreement with the findings of Ifijeh, Iwu-James, Adebayo (2016) who found low level of awareness among users of libraries.

Results equally revealed that E-Library Services Use for Specific aspects of Entrepreneurship Skills Development among rural young adults in Lagos State is at low extent. This could be linked to lack of interest in entrepreneurship ventures among young adults/get rich quick syndrome among others. This finding agrees with Ugwu (2012)who remarked the absence of creativity and entrepreneurial competencies among young adults' school leavers; and Achonna (2008) who found that access/usage of e-resources among undergraduates was low due to lack of skills/inadequate ICTs/power outrage among others.

Moreover, results showed that several factors pose as challenges to rural young adults in Lagos State in relation to availability, awareness and use of e-library services for the development of entrepreneurship skills. These factors include: Inadequate ICT facilities/training to enhance e-library services delivery on entrepreneurship skills, Irregular e-library services, poor awareness programme/power supply to use e-library devices/services, rural young adults interest in paid employment rather than in entrepreneurship, difficulty in securing financial support necessary to start a business venture/zeal to get rich quickly. These findings support Urhiewhu, Okeke & Nwafo (2015) who found epileptic power supply, slow bandwidth, lack of skills, server slowness/frequent breakdown of ICT facilities knowledge institutions in Delta/Edo States, Nigeria.

Finally, the study established that positive linear relationships exist between availability, awareness and use of e-library services for entrepreneurship skills development among rural young adults. In other words, when the level of e-library services availability and awareness is high, there will be corresponding increase in their usage for entrepreneurship skills development among rural young adults in Lagos State.

Conclusion and Recommendations

Generally, e-library services availability, awareness and use for entrepreneurship skills development is at low level due to several factors ranging from poor infrastructural development toinadequate awareness creation/lack of interest in the use of available e-library services among rural young adults in Lagos State. Based on the above findings, the following recommendations were made:

I. Institutions of learning providing e-library services such as Yaba College of Technology to rural young adults through their rural communities' campuses should urgently improve on services delivery by expanding their online databases subscriptions to include Database on African Thesis and Dissertations (DATAD) among others in which it had very low ratings by respondents capable of meeting their entrepreneurship skills developmental needs; as well as the State government's active involvement through public e-library services.

II. Improved awareness creation programmes should also be embarked upon by institutions already in the delivery of e-library services to rural young adults in communities of the state.

III. Rural young adults in the state should be encouraged to develop the spirit of self-sufficient through entrepreneurship skills development rather than waiting for the inadequate/non-existing paid employment.

IV. Mechanisms should be put in place to overcome the factors challenging e-library services availability, awareness and use identified in the study.

References

Achonna, A. U. (2008). Awareness, access and usage of e-journal resources of the library by the students of Yaba College of technology, Yaba-Lagos Nigeria. *Samaru Journal of Information Studies,* 8(1), 26-34.

American Library Association—Office for Information Technology Policy (OITP, 2015). A national policy agenda for libraries: The policy revolution initiative. Retrieved April 10th, 2017 from https://www.google.com.ng/search?dcr=0&source=hp&q=national+policy+agenda+for+libraries&oq=national+policy+agenda+for+libraries&g

s_l=psy- ab.3...0.0.0.4368.0.0.0.0.0.0.0.0.0..0.0....0...1..64.psy-ab..0.0.0....0.e1KwYB5oOTI

Ifijeh, G., Iwu-James, J. & Adebayo, O. (2016). Digital Inclusion and Sustainable Development in Nigeria: The Role of Libraries. 3rd International Conference on African Development Issues: Covenant University Press, 52 – 57.

Jones, H. (2011). "Are our students prepared for university?" *Bioscience Education,* 18 (1), Retrieved March 3, 2017 from http://www.bioscience.heacademy.ac.uk/journal/vol18/beej-18-4SE.aspx.

Joy, I. I. &Idowu, A. I. (2014). Utilization and user satisfaction of public library services in south-west, Nigeria in the 21st century: A survey. *International Journal of Library Science,* 3(1): 1- 6.

Organisation for Economic Co-operation and Development's (OECD, 2015). Making skills everyone's business: A call to transform adult learning in the United States. Research Report Under the U.S. Department of Education Office of Career, Technical, and Adult Education. Retrieved April 10th, 2017 from **http://www.oecd- ilibrary.org/science-** and-technology/oecd-digital-economy-outlook-2015/internet- users-by-age-16-24- and-65-74-year-olds-2014_9789264232440-graph78-en.

Owino, O. S. (2013). *The impact of e-learning on academic performance: a case study of group learning sets.* A Master Degree Thesis in The Department of Sociology and Social Work, Faculty of Arts, College of Humanities and Social Sciences, University of Nairobi, P. 1.

Saravanan, T., Kalaivani, M. M. & Senthilkumar, V. (2012). Does the Digital Environment Improve Modern Users' Internet Awareness? *Library Philosophy and Practice.* Retrieved April 10th, 2017 from: http://www.webpages.uidaho.edu/~mbolin/saravanan-kalaivanis-enthilkumar.htm

Ugwu, F. N. & Ezeani, C. N. (2012). Evaluation of Entrepreneurship Awareness and Skills among LIS Students in Universities in South East Nigeria. *Library Philosophy and Practice.* Retrieved April 10th, 2017 from: http://digitalcommons.unl.edu/libphilprac/

Ugwu, F. N. (2012). Competencies possessed by library and information science students for entrepreneurship in three Nigerian universities. *A Master Degree Dissertation in Library and Information Science Department, University of Nigeria, Nsukka,* p. 15.

Urhiewhu, L.O, Okeke, I.E. & Nwafo, M. C. (2015). Extent of digital information resources usage by undergraduates of selected higher institutions in Delta and Edo State Nigeria. *Research on Humanities and Social Sciences*, 5 (14), 110 – 117.

EFFECTIVE RECORDS MANAGEMENT TO FIGHT CORRUPTION

EXAMINING THE SIGNIFICANCE OF THE LEGISLATIVE FRAMEWORKS AND SUITABLE PRACTICE FOR SAFEGUARDING PUBLIC RECORDS IN SWAZILAND

Nqoba Msibi
Principal Archivist, Swaziland National Archives

and
Zawedde Nsibirwa
Lecturer, Information Studies Programme School of Social Sciences, University of Kwazulu Natal, South Africa.

Abstract

The failure to implement proper records safeguarding initiatives in Swaziland government ministries headquarters has led to valuable public records not being transferred to the Department of Swaziland National Archives (SNA). This paper sought to investigate the records management statutory framework and practices in the Swaziland Government Ministries and the SNA, in order to identify gaps in records care framework that would impact on the effective and proper care of records. A two-pronged approach was used that is document analysis and a survey. A survey of 21 government ministries' headquarters and the SNA was conducted. A total population of 89 members of staff, including senior officers from the SNA were purposively selected. This included mainly people who dealt with the management and care of records in the various government ministries and the SNA. The study used qualitative and quantitative methodological data collection techniques to complement each other and obtain in-depth analysis. The findings reflect that government ministries are making a remarkable effort into the care of public records. However, the absence of legislation that caters for the proper management of records throughout their life cycle, as well as considering issues pertaining to the management and care of electronic records, has been a major challenge. The study further revealed that the majority of the government ministries and departments did not have policies relating to the management and care of records. The study recommends the amendment of the SNA Act No.5 of 1971, the development of ministerial records management policies that will incorporate issues relating to the care of all ministerial records and the implementation of a records preservation programme that shall capacitate all officers responsible for the management and care of public records.

Keywords: *Public Records; Legislation; National Archives, Swaziland*

Introduction

In order to ensure that records and archives are appropriately managed and preserved, there has to be a legal instrument mandating governments to protect their records for accountability and historical reasons (Parer, 2000). Archival legislation provides the crucial framework that is the binding principles and rules that permit records and archives services to operate with authority in dealing with government organisations. The archival institutions both national and provincial in Southern Africa are assigned to facilitate the effective management of records to determine records of archival value for posterity (Ngoepe & Keakopa, 2011). Pareer (2000) states that “archival legislation reflects the decisions made about how a country or jurisdiction intends to manage its records” (p. 1). The legislative framework includes primary legislation that is the Act that provides the broad structure of how to manage the records, and secondary legislation that is the legislative regulations, policies and procedures that stem from the Act to help with its execution. “All archives legislation will be a combination of the two” according to Pareer (2000) and it is important to have equity between the primary (acts and decrees) and secondary legislation (rules and regulations). However, laws are required and some may contend and say that archival legislation does not automatically ensure compliance. Yet, the absence of this legal framework that establishes records and archival authority will not assure the identification, preservation and access to archival records. Apart from the primary and secondary legislation, standards and procedures are required for implementation of procedures and guidelines.

The Study Background

The Swaziland National Archives (SNA) was established in 1971 and placed under the Deputy Prime Minister’s portfolio until 1990. It has since been moved to various ministries and was not appropriately placed and it lacked recognition and adequate funding. Pareer (2000) highlights that, “how an archive is established and administratively placed within government is strategically important”. The SNA is now placed under the Ministry of Information, Communications and Technology (MoICT). The institution had in the past been an end-player in the management of records, serving only as a recipient of closed/inactive records. A government circular memorandum of 17 March, 2010 placed all government registries under the SNA (SNA, 2013). The SNA was mandated with ensuring the proper management and care of all public records throughout their life cycle. The quality of management of records, at the early stages of their life and throughout their life cycle, influences their long-term existence as authentic and reliable records. It was only after its transfer to the MoICT that the SNA expanded its records and archives management mandate, in line with international standards and best practice (SNA, 2013).

In Swaziland, like many other countries, government is the largest records generating entity. However, most of the records produced by the Swaziland government ministries normally reach the SNA in a bad state (Tsabedze, 2012). As the SNA has only recently in 2010 been assigned the duty of records management of government records throughout their life cycle. The proper management of public records ensures the continued access to a nation’s documentary heritage is dependent on legislative framework (acts, regulations, rules and policies). Legislations governing archival and records management in most of the Eastern and Southern Africa Regional Branch of the International Council on Archives (ESARBICA) countries are outdated. This makes it difficult to adopt new technologies and implement management strategies pertaining to records and archives (Ndenje-Sichalwe, 2010).

Failure to implement proper records preservation initiatives in the headquarters of Swaziland government ministries has resulted in many invaluable public records not finding their way to the National Archives as the Swazi nation's documentary heritage and if they do, their lifespan is normally short (Tsabedze, 2012; SNA 2008). Challenges of low budget, poor storage, poor handling, lack of skills, loss of valuable records and failure to transfer records to the SNA after their retention periods have elapsed have continued to be a threat to the usable life of valuable public records (SNA 2008). Ngoepe and Keakopa (2011) emphasise that:

> Archival institutions are not recognised by government and the broader public sphere. As a result, in some instances, archival institutions are seriously under-resourced because their significance is largely unacknowledged.

Statement of the problem

In Swaziland the National Archives Act No. 5 of 1971is the primary legislation for records and archives management. This Act empowers the Director to ensure the proper custody, care and filing of archival materials, the inspection and destruction of archives and the transfer of archives from government offices to the National Archives once their active use period has elapsed (Swaziland Government 1971). The media and the Swaziland Auditor General's report 2014 indicate corruption and fraudulent behaviour due to lack of keeping records for some government projects resulting into loss of government property, financial and physical resources. "In spite of the existence of an Anti-Corruption Commission (ACC) in the Kingdom of Swaziland, corruption persists as a major problem in the country which brings with it significant negative consequences on the economy and society" (Hope, 2016). There is a need for proper implementation of appropriate legislation together with standards, policies, regulations, guidelines and fully functional processes. An African proverb states "when the drummers change their beat the dancers must also change their steps". Therefore, comprehensive records and archives management laws are a critical factor for sound records management practices.

Given the above problem, the study highlights the importance of legal and policy frameworks required to support the management of records and archives in Swaziland. The study discusses the Archives Act No. 5 of 1971 regarding the effective management of records and archives in Swaziland. Therefore the study aims to achieve the following:-

- Analysis of the current legislation (primary) that is the Archives Act No. 5 of 1971 and the National Archives and Records Bill of 2010 to identify the gaps and challenges.
- The examination of policy and legislative framework (secondary) pertaining to records and archives preservation in Swaziland government ministries and the SNA.
- To make recommendations based on the findings.

Overview of Archival Legislation

It is of prime importance to ensure that the archives legislation exhibits the archival principles for establishing the purpose and the objectives of the archives. In the past, archival legislation in most Commonwealth countries has been influenced by the Public Records Act of 1958 of the United Kingdom. This Act emphasized the primary responsibility of the National Archives, which is to ensure their continued availability for research purposes (Parer, 2000). Archives legislations essentially covered aspects pertaining to controlling the destruction of ephemeral records and transfer of valuable records to the National Archives as well as conferring the right of public access. These acts according to Hurley's (2015) generational framework are namely "the first generation acts". However, legislation did not always commission archives to regulate active records that were in frequent use and in the place of origin as well as semi-active records in the organisations or records centres (Parer, 2000). According to Hurley (2015) "the archives authority was seen as a passive recipient of records deemed to be of permanent value once the government had finished with them". The second generation acts include records management of the active and semi-active records, giving the archive the authority to control record keeping throughout government and specifies public rights of access after a stated period of time (Hurley 2015). Hurley (2015) emphasizes "third generation acts will say what the principles are which govern good recordkeeping, they will lay down the outcomes which must be achieved and the expectations…which must be satisfied".

The emergence of electronic records has created a radical change in the way records are kept and managed. This changed and has been the primary reason for countries to update their archives legislation to make provision for the management of electronic records and clearly outline how their creation, accessibility and disposal will be controlled. It is important that archival institutions have a clear legislative mandate for establishing and prescribing record-keeping requirements (Parer, 2000).

A study conducted by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in 1985 prompted the review of many concerning archives legislations. The reason for reviewing legislation, was to accommodate the changes brought about by electronic records management, as well as the records continuum model, as articulated in Australia and the need for archivists to address the keeping of records across the entire continuum (Parer, 2000). A number of countries have revised their legislation since the UNESCO study including Australia, New Zealand, Canada, USA and many others. The International Council on Archives(ICA) (2004) state that "the varied history, legal tradition and experience in different countries have no doubt created differences in the content, interpretations and applications of archives legislation". However, there is a similar need for clear, applicable, comprehensive and modern laws that cater for new developments especially technological ones as well as new organisational orientations including records related laws like access to information laws. Anderson (2013) highlights that:

> There are many laws that require records to be kept, but they may have definitions that are not consistent and are sometimes even conflicting, because the laws have been developed at different times, for varying purposes, or there is a lack of standardised definitions in the national legislative environment, or both. Thus there is a need to work towards review and harmonisation within national boundaries.

Revision of legislation is essential to give greater emphasis to record management standards and the need for government departments to be accountable. Legislative standards are recognised by a number of governments as a necessary part of good records management practices (Pareer, 2000).

A brief background to records and archival legislation implementation

The inability of registries and archival institutions to effectively execute their records management responsibilities has been haunting the development of public sector records management programmes for a long time (Kemoni, 2007). According to Ngoepe and Keakopa (2011), the ineffectiveness of the archival institutions is a result of a number of elements including:

- The lack of proper implementation of the existing legislations and policies.
- Out-of-date archival legislation
- Archival institutions not being recognised by government and their placement within government ministries.

Records management programmes have been ineffective in Southern Africa, also due to the lack of an integrated strategy to ensure compliance with archival legislation and support for decision-making in the public sector (Ngoepe 2014). In addition, Ngoepe (2014) believes that one of the factors that culminate in the poor implementation of proper records management programmes is the absence of relevant records management models, hence the need to customize the models to meet the specific needs and records management requirements of governmental bodies. However, Okello-Obura (2011) states that in Uganda “not much effort have been made to engage legal and policy makers on the need and value of functional legal and policy provisions for records and archives management”. According to the Nelson Mandela Foundation, National Archives and Records Service and University of Witwatersrand (2007), it is important to design records management programmes that support organisational strategic objectives and add value to the development of the organisation.

In the government of Swaziland, failure to implement proper records management practices has resulted in compromised public accountability (Tsabedze, Mutula & Jacobs 2012). Hope (2016) highlights that:

> *Corruption thrives on a lack of reliable information. Governments should therefore guarantee the right of everyone to have access, on request, to official non-state secret documents held by public authorities.*

In order for transparency and accountability to prevail, records need to be managed throughout their life cycle. However, anecdotal evidence shows this scenario is changing since the SNA has assumed responsibility for the management of records in government registries. The SNA is mandated with ensuring the proper management and care of public records in all government ministries and departments throughout their life cycle. Records with enduring value are transferred to the SNA for long-term preservation.

The operations of the SNA are governed and guided by the Archives Act No. 5 of 1971, which is currently under review through the National Archives and Records Bill of 2010. Having been placed in an appropriate government ministry (MoICT) the national archive assumed its rightful responsibility. The SNA has embarked on a number of reform programmes aimed at improving the records and archives management practices in the 21 government ministries and the SNA (anecdotal). Apart from the main legislation, Pareer (2000) states that:

> *Government agencies need comprehensive assistance, in the form of standards and guidelines, if their records are to be used fully as a business information resource for government and to survive as future archives.*

Methodology

This study used document analysis and a survey to collect data. Both qualitative and quantitative methods were used, to complement each other and to obtain in-depth analysis. A survey was used to collect data using an interview schedule and questionnaires. The purposive sampling technique was used to select the population of the study. Only personnel dealing with the management and care of records in the 21 government ministries and the SNA were included in the study.

The population of 87, included Registry Officers, Secretaries to Principal Secretaries, Secretaries to Ministers, Principal Human Resource Officers and the Director, Senior Archivist and Records Management staff of the SNA. A semi-structured interview schedule was used to collect data from the Director of the National Archives, the Principal Archivist and the Senior Archivist, in order to acquire data about the impact of administrative issues on the management of records and archives. Of the 84 questionnaires that were distributed 57 were returned yielding a response rate of 67.8%.

The Swaziland Archives Act No. 5 of 1971 and the Swaziland National Archives and Records Management Bill 2010 was examined using the Association of Commonwealth Archivists and Records Managers guide for "Archival Legislation for Commonwealth Countries" by Pareer (2000) as a yardstick. The guide was chosen as Swaziland is a commonwealth country and the guide is internationally accepted for outlining modern best practices for archival legislation principles which can be used to examine the legislative framework as well as a concrete guide for updating records and archives legislation. By looking at facets of the present and future archival legislation that should:

- Reflect the needs of the country with respect to its records
- Safeguards the interests of the public with respect to records
- Reflect best practice
- Reflect and authorizes the role and responsibilities an archives will have, and the services it will provide (Pareer, 2000). The present legislation needs to reflect the effect of emergent issues of the electronic environment, convergent technologies, the internet, and e-government. This raises the questions regarding:
- Management of electronic documents and records, virtual files, multimedia and compound documents.
- What is a 'record' in the new technology environments? (Pareer, 2000)

Findings of the Study

The findings of the study are discussed below. To bring together data from the two-prongs (document analysis and survey) crystallisation was used. Crystallisation is to "bring together and formulate the reality that emerges from the various data-gathering techniques and data analyses" (Wagner et al., 2012).

Levels of skills and knowledge in records management

Training and the relevant skills required to properly manage and take good care of records are critical in ensuring continued availability and access to public records. As well as helping staff to understand the legislation that regulates records management and the safeguarding of public records. The need for staffing and professional training in records management is one of the important areas in understanding the depth and breadth of records management (Kalusopa, 2011). Nsibirwa (2012), emphasized the need to employ staff with relevant qualifications and skills, in order to ensure that they make a positive contribution towards the protection and proper care of collections.

According to the interviews, the Swaziland government Scheme of Service states that the minimum entry requirement for records and archives management staff was a diploma in archives and records management. The questionnaire reveals that twelve (21%) of the respondents had qualifications from tertiary institutions only one (1.8%) respondent had a Bachelor's degree in archives and records management, three had a diploma in archives and records management, 19 (33.3%) had a certificate in archives and records management and 20 (35.1%) had no records management qualification a majority of those 10 (17.5 %) were over 50 years (see Table 1 below). Nearly half of the respondents that did not meet the minimum entry requirements of the Scheme of Service had certificates from tertiary institutions. However, since four (7%) of the respondents with certificates and five (8.8%) without records qualifications are within the age group of 31 to 40 years, they are still trainable according to the civil service training policy which states that civil servants can be trainable up to the age of 45 years (Swaziland Government, 2000).

Table 1: A cross-tabulation of the age of respondents and records management training

N=57

Respondent records management training level	Age group of Respondent												Total	
	20-30		31-40		41-50		51-60		Over 60		Non-response			
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Certificate	4	7	4	7	8	14	3	5.3	0	0	0	0	19	33.3
Diploma	0	0	2	3.5	4	7	2	3.5	0	0	0	0	8	14
Degree	0	0	1	1.8	0	0	0	0	0	0	0	0	1	1.8
Other qualification	0	0	0	0	2	3.5	6	10.5	0	0	0	0	8	14
No RM qualification	2	3.5	5	8.8	3	5.3	9	15.8	1	1.8	0	0	20	35.1
Non-response	0	0	0	0	0	0	0	0	0	0	1	0	1	1.8
Total	6	10.5	12	21	17	29.8	20	35.1	1	1.8	1	1.8	57	100

(Source: Field data)

Legislative framework

The management and preservation of records and archives in the public sector must be governed by law. The Act affords the broad structure of how to manage the records and the legislative regulations, policies and procedures help with its implementation.

However, in this study, Table 2 below shows only six (10.5%) of the respondents stated that they had legislation that regulate the way they manage records in their ministries and 41 (72%) either did not have records management legislation in their ministries or were not sure about the existence of any legislative framework that governs the management of records in their ministries and 10 (17.5%) did not respond.

Table 2: Existence of records management legislation

Records management legislation	Count	%
Yes	6	10.5
No	18	31.6
Unsure	23	40.4
Non-response	10	17.5
Total	57	100

N = 57

(Source: Field data)

From the six respondents (see Table 3 below) who had legislation for records management in their ministries, four (66.7 %) were aware of the contents of the legislation and two (33.3%) were not aware of the contents of the legislative framework. Yet, Kalusopa and Mampe (2012) state that it is important for government entities and their employees to be aware of their legal and regulatory obligations, in order to ensure their compliance with these requirements for records. Kalusopa and Mampe (2012) add that some legislation provides detailed information on how long records should be preserved, as well as how to govern the different formats that records may be stored in.

Table 3: Availability of records legislation and awareness of contents of legislation

N=6

Records legislation available	**Respondent awareness of legislation contents**						**Total**	
	Yes		No		Unsure			
	Count	%	Count	%	Count	%	Count	%
Yes	4	66.7	2	33.3	0	0	6	100
Total	4	66.7	2	33.3	0	0	6	100

Maseko (2010) states that a sound legislative framework like the Swaziland National Archives Act No. 5 of 1971 provides for the establishment of a national archival institution that is mandated [through its mission statement] with ensuring the long-term preservation and access to all national documentary heritage, regardless of format or media in and about Swaziland. Similarly, Kalusopa and Mampe (2012) state that the regulatory framework for records management in Botswana assigned the accountability and responsibility for the management of all official records to the Director of the National Archives. Although the National Archives Act No. 5 of 1971 that establishes the SNA states the main objective and scope of the institution is the custody, care and control of public archives only, one of the short-comings of the archives law in Swaziland is that it does not cater for the management of records in their active and semi-current stages, neither does it address the issue of electronic records management and related systems to manage records in electronic format. Section 3 of the National Archives Act No. 5 of 1971 provides for the proper storage and preservation of archival materials only (Swaziland Government 1971).The legislation is not comprehensive and the current Archives Act No. 5 of 1971 does not give the archives authority to manage records (Pareer, 2000) and fits in with the generational framework by Hurley (2015) as a first generation act. The first generation act basically:

- Establishes an archives authority
- Prohibits destruction without authority's approval
- Permits access to transfer records unless restricted.

Yet, the principle of the Records Continuum advocates for a consistent and coherent regime of records management processes, from the time records are created through to the preservation and use of records as archives. However, the Act has been under review since August 2010 with the development of the Swaziland National Archives and Records Management Bill (Swaziland Government Gazette Vol XLVII no 91). Pareer (2000) in the “Archival Legislation for Commonwealth Countries” highlights that:

> The legislation will also be guided by the general political, economic, social, cultural and administrative environment; by existing records and archives legislation; and by the general level of records and archival development.

Therefore, the National Archives Act No. 5 of 1971 reflects what was going on in Swaziland during the 70s and the Bill should relate to current developments in Swaziland including emergent issues relating to the electronic records and their environment. The examination of the Act and the Bill are discussed and only major findings are highlighted.

It is important that clear and accurate definitions are used as they are codes used when interpreting archival legislation. The National Archives Act No. 5 of 1971, defines only a few terms and the Bill defines a lot of terms including format dependent terms. The Bill includes electronic records by using a broad definition of ‘records’ as well as format dependent terms namely data, electronic records systems, email, email message, email system and secure electronic signature. However, Pareer (2000) states that definitions should be format independent as technology changes rapidly. In addition, the Bill defines a number of terms that are not used in the body of the proposed legislation.

A lot of the facets that were not included in the current Act have been incorporated in the Bill regarding the scope of the legislation, the role of the public archives, and its governance and administration. However, although the National Archives and Records Bill of 2010 has not yet been presented to parliament for review, it still needs refining. The Bill also includes legal deposit collection in Part IV (Historical, public and general records) that contradicts the definition of records used:

> Information created, received and maintained as evidence and information as evidence…. In pursuance of legal obligations or in the transaction of business regardless of physical form and characteristics.

Legal deposit is dissimilar as it is a requirement for published materials that is also usually applicable through different legislation for producers to deposit publications created at particular institutions for access and posterity.

Policy, procedures and regulatory framework
Policies play an important role in providing guidance and ensuring that standard records management procedures are followed and implemented (Ngulube 2003).

The study revealed shown in Table 4 below that a majority 42 (73.7%) of respondents state that their ministries and departments did not have policies that relate to records management. Fourteen (24.6%) stated that they had the policies and one (1.8%) did not respond. Within those 14 (24.6%) respondents whose ministries and departments had records management policies, seven (50%) had policies related to records preservation and the other seven (50%) did not have records preservation-related policies. The lack of awareness about preservation policies impacts negatively on records management practices in the government ministries. Tsabedze (2012), in a study on "Public sector records management in Swaziland", found that 85% of the respondents in the surveyed ministries did not have records management policies. The results in the current study reflect a slight improvement, since it recorded 42 (73.7%) respondents that did not have records management policies in their ministries. This may be a result of the aggressive initiatives by the SNA to distribute the National Records Management Policy (NRMP) to government ministries and departments.

Table 4: Existence of records management (RM) related policies

N=57

Existence of RM policies	**Count**	**%**
Yes	14	24.6
No	42	73.7
Non-response	1	1.8
Total	57	100.1*

(Source: Field Data)

**The total percentage does not add up to exactly 100% because percentages have been rounded off to one decimal place.*

Standards and records management procedures

Legislation should be supported by international standards, procedural guidelines and instructions (Pareer, 2000). Though the ICA (2004) states that archives legislation should direct the National Archives to develop mandatory standards and regulations. The SNA uses the ISO 15489 in order to make the international records management standard comprehensible and easy to follow, the SNA developed a records management procedures manual. This manual is an essential guide for the operations of a registry, since it provides registry personnel with procedures that are geared towards the attainment of acceptable records management practices (Chaterera, 2013). In the current study shown in Table 5 below, 42 (73.7%) of the respondents stated that they had the records procedures manual, records management regulations or a combination of the two. These results paints a good picture about the future of proper records management practices in Swaziland government ministries and departments. Chaterera (2013) had serious concerns with the results of the study on “Records surveys and the management of public records in Zimbabwe”, which reflected that only 35% of surveyed registries had procedures manuals. Chaterera (2013) added that the procedures manual was critical to the success of registry operations, without which service delivery could be compromised.

Table 5: Availability of records procedures manual and regulations in ministries

N = 57

Records procedures manual and records management regulations	**Count**	**%**
Records procedures manual	34	59.6
Records management regulations	5	8.8
Have both manual and regulations	3	5.3
Non-response	15	26.3
Total	57	100

(Source: Field data)

Conclusion and Recommendations

The loss and deterioration of valuable public records and archives in the headquarters of Swaziland government ministries, is a result of outdated legislation amongst other factors and the existence of ineffective policies that affect how records are managed. The Swaziland National Archives Act No. 5 of 1971 does not cater for the management of records in their active and semi-current stages, neither does it address the issue of electronic records management and related systems to manage records in electronic format.
Though the SNA is mandated to develop policies and guidelines from standards, the non-compliance with existing records management policies and procedures has resulted in the ineffectiveness of records management programmes in Swaziland government ministries and departments. This could be a result of the SNA mandate not stemming from primary legislation. Therefore, the government is unable to use legislation to ensure that its records and archives are appropriately managed and preserved over time for accountability and transparency.

Most of the officers working with records in the Swaziland government ministries do not manage records according to the requirements of international records management standards as most staff were not qualified. According to the results of this study, 37 (65%) of the officers working with records in the ministries were either not sure or did not implement records management activities according to a records management standard. There is potential for the improvement of the records management practices in Swaziland government ministries. In 2012, the SNA launched the Records Management Procedures Manual which was meant to be a guiding tool for all government ministries and department on proper records management practices. According to Chaterera (2013), a records procedures manual is an essential guide for the operations of a registry, since it provides registry personnel with procedures that are geared towards the attainment of acceptable records management practices.

The following recommendations are submitted as building blocks for developing a records legislative framework for the Swaziland government ministries and the SNA. As the drummers change their beat the dancers will also have to change their steps:-

- The Swaziland National Archives should amend the Swaziland National Archives Act No. 5 of 1971, because it is now outdated. The new Act should incorporate clauses relating to the management of records throughout their life cycle and also address the issue of electronic records management and related systems to manage records in electronic format. The new legislation should not use format dependent terms to include electronic records but rather use the generic or brads terms to define them.
- Though the National Archives and Records Bill of 2010 has not yet been presented to parliament for review it still requires refining. The Bill should not include collection of legal deposit materials as they are published materials that are not related to records and archives.
- The SNA should facilitate the development of ministerial records management policies that will address specific ministerial records management requirements. These policies should incorporate issues relating to the preservation of all ministerial records. Ministries should be encouraged to ensure that all staff members are made aware of the records management and preservation policies.
- The SNA should develop a training programme that will capacitate all personnel dealing with management of records on records management standards and procedures. There should also be a policy for training and recruiting qualified staff in the records and archives management cadre.

References

Anderson, K. (2013). Recordkeeping definitions in legislation: a conceptual step towards smoothing business interaction in the digitally networked world? Legislation – Archival Legal Frameworks for the Digital Future

Auditor General. (2014). Report of the auditor general on the work of the office of the Auditor General and on the government accounts of the Kingdom of Swaziland. Retrieved from http://www.cabri-sbo.org/uploads/files/Documents/swaziland_2014_oversight_external_audit_report_office_of_the_auditor_general_comesa_sadc_english_1.pdf

Chaterera, F. (2013). Records surveys and the management of public records in Zimbabwe. MIS thesis. Pretoria: University of South Africa.

Hope, R. K. (2016). The Corruption Problem in Swaziland: consequences and some aspects of policy to combat it. Development Practice International, 32(2), 130–158.

Hurley, C. (2015). From dust bins to disk-drives and now dispersal. Archives and Manuscripts 26(2). Retrieved from http://www.infotech.monash.educ.au/research/groups/rcrg/publications/nowtodispersal.hmtl

International Council on Archives. (2004). ICA/CLM 1996-2004 committee on archival legal matters. Retrieved from https://www.ica.org/sites/default/files/ICA_Study-19-Committee-on-Archival-Legal-Matters-1996-2004_EN.pdf

Kalusopa, T. (2011). Developing an e-records readiness framework for labour organisations in Botswana. PhD diss. Pretoria: University of South Africa.

Kalusopa, T. and G. Mampe (2012). Records management and service delivery: the case of the Department of Corporate Services in the Ministry of Health, Botswana. Unpublished, Department of Library and Information Studies, University of Botswana.

Kemoni, H.N. (2007). Records management practices and service delivery in Kenya. PhD diss. Pietermaritzburg: University of KwaZulu-Natal.

Maseko, A. (2010). The management of audio-visual records at the Swaziland Television Authority (STVA). MIS thesis. Gaborone: University of Botswana.

Ndenje-Sichalwe, E. (2010). The significance of records management to fostering accountability in the public service reform programme of Tanzania. PhD diss. Pietermaritzburg: University of KwaZulu-Natal.

Nelson Mandela Foundation, National Archives and Records Service and University of Witwatersrand. (2007). *Archives at the cross roads: open report to the Minister of Arts and Culture from the archival conference "national system, public interest"*. Houghton, South Africa, 23-24 April.

Ngoepe, M. (2014). *Records management models in the public sector in South Africa: is there a flicker of light at the end of the dark tunnel*? *information development.* South Africa: Sage. Retrieved from http://idv.sagepub.com/content/early/2014/09/17/0266666914550492
Ngoepe, M and S. M. Keakopa. (2011). An assessment of the state of national archival and records systems in the ESARBICA region: a South Africa-Botswana comparison. *Records Management Journal,* 21(2), 145-160.

Ngulube, P. (2003). Preservation and access to public records in South Africa. PhD diss. Pietermaritzburg: University of Natal.

Nsibirwa, Z. (2012). Preservation of and access to legal deposit materials in South Africa. PhD diss. Pietermaritzburg: University of KwaZulu-Natal.

Okello-Obura, C. (2011). Records and Archives Legal and Policy Frameworks in Uganda. Library Philosophy and Practice (ejournal). Retrieved from http://digitalcommons.unl.edu/libphilprac/608

Parer, D. 2000. Archival legislation for Commonwealth countries. Association of Commonwealth Archivists and Records Managers.

Swaziland. *Swaziland Archives Act No.5, 1971.* Mbabane: Swaziland Government Printer.

Swaziland. (2008). Department of Swaziland National Archives. Report on the review of government registries in Swaziland.

Swaziland. (2013). Department of Swaziland National Archives. Report on inspection of government registries.

Tsabedze, V. (2010). Records management in government ministries in Swaziland. MA thesis. Empangeni: University of Zululand.
Tsabedze, V., S.M. Mutula and D. Jacobs. (2012). Records management in the government of Swaziland. *ESARBICA Journal,* 31, 48-61.

Wagner, C., B. Kawulich and M. Garner. (2012). Doing social research: A global context. London: McGraw-Hill.

A PROPOSAL FOR IMPROVING RECORDS KEEPING PRACTICES OF TRADITIONAL INSTITUTIONS IN GA MOLEPO, LIMPOPO PROVINCE, SOUTH AFRICA.

Mahlaga J. Molepo
Molepo Traditional Dance Coop. Ltd
South Africa

and
Linda M. Cloete
University of South Africa

Abstract

The way in which an institution treats its records is crucial for its survival in a rapidly changing society. The purpose of the study was to investigate the records management practices and challenges faced by traditional institutions of governance and leadership in Ga Molepo, Limpopo province, South Africa. The researcher employed a cross sectional survey in order to quantitatively examine the challenges faced by members of traditional councils. A researcher-administered questionnaire was used as a data collection tool to study a stratified sample of thirty-five from an estimated population of three hundred and fifty. The findings reveal patterns and trends of non-compliance with records management standards and guidelines. Although there are sporadic cases of records keeping, a greater number of respondents revealed traditional institutions lack the facilities, equipment, education and trained/skilled personnel to apply correct records management procedures in their daily administration of their traditional communities. The main value of the study is to create awareness of records management as one of the neglected areas in traditional institutions – which are by current legislative arrangement, the closest form of governance and leadership to rural communities in light of their relationship with local municipalities and the Department of Cooperative Governance and Traditional Affairs.

Keywords: *records management, traditional institutions, accountability, governance*

Introduction

Traditional Institutions in modern day Africa, just like elsewhere in the world, have been in existence pre the colonial era. Crook (2005:1) defines traditional institutions as all those forms of social and political authority which have their historical origin in the precolonial states and societies. Traditional institutions in

Ga Molepo, Limpopo province have existed during the pre-colonial era and are still in existence today. It would be valuable and worthwhile to investigate the records management practices of traditional institutions in Ga Molepo since most of them still use the more traditional ways of managing records. According to Motsi (2004:63) clay tablets, stone carvings, stone drawings, leather, parchment and vellum, cloth and tree barks are some of the traditional ways of managing records in Africa. Although most of the records management methods used within traditional institutions in Ga Molepo are unconventional, there has been some transformation since the passing of the Traditional Leadership and Governance Framework Act (No. 41 of 2003), as amended by the Traditional Leadership and Governance Framework Amended Act (No. 23 of 2009). The aim of the Act is to, amongst others, provide for the recognition of traditional councils often made up of members of royal families consisting of senior leadership, headmen and women as well as regents, who according to the Act, are required to perform administrative tasks such as, *inter alia*, records keeping within their respective traditional communities. On the one hand, for unconventional records, traditional institutions in Ga Molepo use beads and various soil colours as paint on mud huts walls, to mention a few. On the other hand, they use modern stationery such as exercise and notebooks (in some cases without carbon copies), and ball-points to create documents and these are the records that need to be managed. In most cases, administrative tasks, including records management, are delegated to members of traditional councils, also referred to as 'secretaries'. As a result, there are many challenges relating to records management.

Often, residents complain about the amount of time and money it takes to access official documents such as proof of residence from traditional institutions – some of whom do not even issue out receipts for transactions involving residents' money. In trying to find out what the records management practices of traditional institutions are, the study highlights records management in traditional institutions to be one critical area that has not been given the attention it deserves since the ushering in of a democratic dispensation in 1994. Such a neglect of a critical functional area in respect of records management can be felt in the rapid loss of societal memory on important customs and crucial past events, especially within rural traditional communities led by Traditional Institutions of Governance and Leadership. Records management is not only a tool for interpreting the past, but is also a vital component for predicting the future (Mnjama 2004:33).

The issue of records management has become a serious one to the extent that many residents are beginning to question the ability of traditional institutions to govern and lead in a democratic society that is battling with accountability and transparency issues. After all, records are said to be a pre-condition for living in or exercising a democratic regime (Mihiotis 2012:123). Residents are questioning the relevance of traditional institutions, complaining about lack of transparency and accountability as well as the loss of historical records.

Problem statement

Traditional institutions of leadership and governance are struggling to survive in a rapidly changing democratic South African society. In order to stay relevant with the changing political landscape, traditional councils need to exercise transparency in their records management practices in order to be accountable to their respective communities. Failure to do so will result in a loss of communal memory, possible social unrest and lack of trust on the part of traditional rural communities. While most of the focus on records management is at government level, very little has been researched on the records practices of traditional institutions.

The aim of the study was to conduct an investigation into the records management practices and challenges faced by traditional institutions in Ga Molepo.

The article reports results obtained from investigating the following objectives:

- To investigate records management practices of senior leadership and headmen/women in traditional council offices.
- To determine standards and guidelines used for records management in traditional council offices.
- To determine the information culture in traditional offices.
- To establish the type of methods used to manage records.
- To make recommendations for improvements on records keeping practices in traditional institutions in Ga Molepo, Limpopo province, South Africa

Literature review

The purpose of the literature review was to investigate the findings of other researchers on records management. All the findings were reviewed to determine to what extent records management practices in traditional institutions have been investigated and specifically identify challenges. At the time of the investigation no specific literature sources pertaining to records management in traditional institutions could be traced and this constitutes a research gap. Very few studies have been conducted on this topic. The researcher is only aware of a study conducted in Ghana by Dr Musah Adams on: The management of district assembly records for development planning; implications for good governance. This was a Phd study and the findings are yet to be published. The literature review therefore focussed on aspects of records management practices and challenges that could potentially also impact traditional institutions.

Ancient ways of documenting information

According to Kolyva, (2008) as quoted by Mihiotis (2012:124) "the oldest ways of preserving memory were not in writing, thus, one could claim that recordkeeping precedes writing as we know it". Leaves, skins, tree bark, stones, clay, rocks and string are some of the traditional ways in which information was documented (Motsi 2004:62). The question is whether those ancient ways can pass the academic test of being referred to as records management within the context of traditional communities. The researcher perceives records management within this context as the preservation of traditional records mostly found within traditional communities as led by traditional institutions. Ngulube's (2001:155) definition of records management reveal the ancient ways referred to above may not necessarily be records management in the conventional sense. As evidenced in the studies by (Ngoepe and Van der Walt 2010; Kemoni 1998; Mensah and Adams 2014 and others), most of the research on records management stops with local government at a departmental level. Therefore, the study illuminated on aspects of records management in traditional institutions which have not been researched.

Modern records management

Apart from the more ancient ways of records management in Africa, Motsi (2004:63) indicates there are also the modern formats of records such as micro-graphics (in the form of micro-film, microfiche and photographic film), video, audiocassettes, films and electronic (digital) media. It is important to consider modern records management in traditional institutions since they have been linked to state organs through the Department of Cooperative Governance and Traditional Affairs, which engages in modern records management. According to the World Bank (2000: 15), modern records management "arises from actual happenings; they are a snapshot of an action or event, they offer a picture of something that happened. To serve their purpose in providing reliable evidence, records in both paper and electronic form must be accurate, complete, and comprehensive". The researcher wanted to investigate if there are any traces of modern records management in traditional institutions. In contrast, a question to ask was: do traditional institutions use modern formats of records management since Motsi (2004) asserts they do?

What is records management?

According to the South African Oxford Pocket Dictionary (2006), "a record is a permanent account of something that is kept for evidence or information". In most traditional institutions, a piece of paper hand written with a pen can be considered a record in the conventional sense of the word in addition to the ancient ways indicated by Motsi (2004). A more conventional explanation offered by Ngulube

(2001:155) is that records management, with its concern for the creation, organization, storage, retrieval, distribution, retirement and final disposal of records irrespective of their format and media, to a great extent, hinges on records managers with necessary skills and knowledge to deal with the records at every stage of their use by society. In light of the explanation the question to ask was what are the literacy levels of members of traditional councils including those responsible for records?

Who sets the standards and guidelines for records management?

Ngulube (2001:158) indicates most guidelines in Anglophone Africa are limited to institutions of higher learning. Anglophone refers to those countries which were colonised by native English speaking nations of Europe and America and therefore use English as the preferred language of communication. That said, national archival institutions have been in the forefront in Africa with the support of institutions such as the World Bank and the International Records Management Trust, International Council on Archives in setting up standards and guidelines on records management (Refer to section 2.2). Although the support that has been given to national archival institutions by the World Bank and the International Records Management Trust have been instrumental in determining standards and guidelines for records management; the effects have not trickled down to the grassroots level where traditional institutions are located. The questions is: where does this leave the definition and practice of 'records management' in traditional institutions?

The role of information professionals

Nengomasha's (2013:8) view that professionals in records and archives should become more of doers than recommenders is a serious indictment on the part of information professionals. The researcher agrees with the notion of information professionals being "doers" rather than recommenders. That is, offering pro bono or paid for consulting services in the areas of records management. This could help generate a new body of knowledge on aspects of records management which have not been researched before.

The political environment and records management

Political power, as can be derived from the role played by political organizations, determines how a society functions and maintains its collective memory. As has always been the trend in Africa and elsewhere in the world, governments come and go. With the coming in of a new political power in government some sources of memory are erased (Muchefa 2012:128). Political power, driven greatly by the ruling elite of the present, determines the way in which society remembers its past. One of the biggest obstacles to this process of transition from an old government to a new one, as Muchefa (2012) has observed in the case of Zimbabwe, is that memory is often politicized. Efforts to introduce modern records management programmes are given priority in government departments and less on non-state entities. Hence very little is known about records management practices in traditional institutions.

Records management: an area of neglect

As Muchefa (2012) highlights, in South Africa, the discriminate pattern referred to under Section 2, Subsection 2.6, could be observed in the manner in which the present government as led by the African National Congress works with Traditional Institutions of Leadership and Government. Could it be true that lack of awareness and political will on the importance of records management amongst African leaders as Motsi (2004:63) notes, could be linked to the records management challenges faced by traditional institutions in Ga Molepo?

In a study that explored a gap in research with regards the relationship between records management and the identification of risks, Ngoepe(2014:1-8) reveals most governmental bodies in South Africa lack records management and risk mitigating frameworks or strategy. The researcher recommends a strong records management regime that can be one of an organization's primary tools in identifying risks and implementing proper risk management. Such a regime could help traditional institutions to deal with the risk of losing records to natural hazards such as mould, fire and floods just to mention a few.

The Department of Cooperative Governance and Traditional Affairs

Instability and the priorities of government appear to contribute to the challenges traditional institutions face. The neglect of records management in traditional institutions could be attributed to the fact that most efforts to implement effective records management often stops with organs of state such as the Department of Cooperative Governance and Traditional Affairs. Cooperation is one thing, implementation is another. The study by Ngoepe and Van der Walt (2010:84) investigated the records management programme used by the Department of Cooperative Governance and Traditional Affairs and paints a grim picture of such inconsistencies where the department has a records management programme for municipalities, yet does very little in terms of guidelines and financial support to ensure effective records management in traditional institutions.

Effective records management vs access to information

According to Mihiotis (2012:123) records are a precondition for living in or exercising in a democratic regime. Svard (2014:5) asserts the way information flows and is managed has consequences for service delivery. Without the essential elements of modern records management highlighted by Leahy (1949) in Section 2 Subsection 2.2, access to records created in traditional institutions would remain a pipedream and no lessons would be learned from the information that comes with the creation and maintenance of records.

Access to information and classification

The attempt by governments in Africa, and specifically also South Africa, to classify information, links very well with the finding by Muchefa (2012:128) (referred to in Section 2 Sub-section 2.6) of the politicization of collective memory – the end result of which causes the deliberate erosion or neglect of records management practices in traditional institutions in favour of those deemed relevant within organs of state such as government departments.

Record centers, facilities and equipment

In a study on the impact of records centres on the management of Public Sector Records in Kenya, Kemoni (1998:55-65) found that the availability of record centres can help with storage and making information available. How then, can the use of a combination of physical and virtual storage facilities solve the challenges of records management as well as access to information in traditional institutions in Ga Molepo?

Information culture

In undertaking this study, the researcher investigated also the information culture in most government departments, in particular, the current model where the Department of Cooperative Governance and Traditional Affairs has delegated the responsibility of record keeping in traditional council offices to people often referred to as *secretaries. "*There is an assumption in some organizations that since we are all document creators, we are equally good records managers" (Svard, 2014:6). In contrast and as indicated in Section 2, Sub-section 2.3, anyone with average information literacy such as reading and writing skills is allowed to create and manage records, hence the prevalence of people referred to as *secretaries* in most in traditional institutions.

The future for traditional institutions

The researcher holds, in tandem with Mensah and Adams (2014:33), that it is a fruitless exercise to name a government like the Department of Cooperative Governance and Traditional Affairs such if there is no culture of corporate governance amongst employees of the state and in related institutions such as traditional councils. "Corporate governance is the process of directing and managing business affairs towards enhancing business prosperity and corporate accountability with the ultimate goal of realizing organizational objectives and long term stakeholder value ... this implies that the management of information and the keeping of records is one of the cornerstones of effective corporate governance" (Mensah and Adams, 2014:33). The King III principles on Corporate Governance have been officially introduced to guide South African organizations with corporate governance (Institute of Directors in Southern Africa, 2012). If applied correctly, the King III principles can assist introduce ethical guidelines and principles in the creation, storage, use and dissemination of records in traditional institutions.

The role of traditional leaders in post-apartheid South Africa

Section 211(1) of the South African Constitution of 1996 states that the institution, status and role of traditional leadership are according to customary law, recognised subject to the Constitution. Phago and Netswera (2011:1023) highlight that Section 211(1) remains a challenge since it does not clearly specify what role traditional leaders should play in a developmental state such as South Africa. The authors further find the activities of traditional leadership are reduced to culture preservation and are not developmental. This begs the question: are traditional institutions still relevant today given the challenge of accessibility to the records they create on a daily basis?

Research Methodology

Approach

Thomas (2013:173) asserts that cross sectional studies involve the study of a group or groups of people with the same characteristics at the same time. The researcher quantitatively studied the records management challenges faced by traditional institutions in Ga Molepo using a cross sectional survey due to the limitations of time and financial constraints in undertaking a larger study. Traditional councils in Ga Molepo are made up royal family members led by a Headman/woman and a Senior Chief. One of the characteristics is that all of them ascend the throne through inheritance and not a democratic elective process. According to Bless and Higson-Smith (1995:43) a survey is a collection of information on a wide range of cases, each case being investigated only on the particular aspect under consideration.

Study population and sampling

In Ga Molepo, traditional councils consist of at least 10 members per village and the whole community is made up of 35 villages. Thus, from a population of 350 members, 35 (10%), were selected as a sample. The researcher believes the sample is representative enough to generalize the findings to the entire population. Another characteristics shared by traditional councils is a strong adherence to customary law. Stratified sampling was used to select every 10th of an element in the targeted population. All elements in the sample were assigned identification numbers. It is said that “stratified sampling ensures the proper representation of the stratification variables, this in turn, enhances the representation of other variables” (Babbie, 2007:206).

Data collection instrument and data analysis

A researcher-administered questionnaire was used to collect data from the sample. The questionnaire consisted of open and closed ended questions set prior to the study using nominal and ordinal scales of measurement. Questions included topics on traditional council membership, form of traditional council, alliance to community organizations, view on partnership with government, relevance of traditional institutions, relationship with municipalities, visits by senior leadership to headmen/women, administrators in traditional councils, corporate governance, offices, equipment and virtual storage facilities, ways use to administer the community, records management, government's provision of resources, community contribution and self-sufficiency. In order to deal with language barriers, the researcher verbally translated the questionnaire from English to Northern Sotho in order to assist respondents understand the questions asked. Statistical Package for the Social Sciences (SPSS) computer software was used to analyse the data.

Findings and discussion

The following findings have been uncovered from the respondents:

Membership
An overwhelming majority of the respondents are of royal family descendant; mostly men and belong to a council under a headman/woman as well as a senior chief. This implies the guidelines set out in Chapter 2, Section 3 (1, 2 and 3) on the establishment of traditional councils in the Traditional Institutions of Governance and Leadership Framework Act 23 of 2009 have either not been implemented or are being transgressed. No form of tangible record such as a founding statement exists to confirm membership and conditions thereof. Out of thirty five respondents (10%), 7,1% are members of a traditional council in their village while only 2, 9% indicated they are not.

Form of traditional council
The findings reveal headmen/women make up the majority of members of the cabinet headed by a Senior Chief at the headquarters of the Molepo Chieftainship at Boshega.14,3% indicated they belong to Senior Leadership while 85,7% say they belong to councils headed by a Headmen/women. This implies traditional councils led by headmen/women are the most neglected with regards records management and the lack of equipment and virtual storage facilities used to administer the community indicated in Subsections 4.10 and 4.12 respectively makes the situation worse.

Community organizations
Apart from being members of traditional councils in their different form, 34,3% of respondents indicated they do not belong to any community organization; 22,9% say they belong to Burial Societies; only 2,9% say they belong to a cooperative; while a staggering 40.0% say they belong to the African National Congress (ANC), that is, the parent body, youth league and women's league respectively. There is no evidence to suggest each traditional council has records

of for instance, the number of community organizations active in their respective villages.

View on partnership with government

The dominant view is that both government and traditional institutions should work together in the country's law making processes. The information in (Figure 2) indicates most members of traditional councils are affiliated to the African National Congress (ANC) in one way or the other. The researcher also found 8,6% of respondents think traditional institutions should play a bigger role in law making processes while 91,4% indicate respondents prefer both: that government continue to be the sole law maker and that traditional institutions play a bigger role . This implies any plans to introduce a records management programme by government in traditional councils would have to start with consultation and active involvement of traditional institutions during implementation.

Relevance of traditional institutions

The general belief in the surveyed area is that traditional institutions are still relevant today and this answers the question posed in Section 2, Subsection 2.14 of the literature review. When asked if traditional institutions are still relevant today, given the current political climate, 57,1% replied yes while 42,9% said they are no longer relevant. This finding is problematic because 42,9% assert traditional institutions are no longer relevant when compared to local government offices in terms of the turnaround time in creating and dispatching essential records such as official letters used to open bank accounts.

By indication, (Figure 4) under Section 4.6 highlights that the relationship between government and traditional institutions at local level is not healthy.

Relationship between municipalities and traditional councils

Responses indicate traditional councils believe there is a lack of political will on the part of local government and such a less corporative relationship could mean government is not willing to encourage traditional institutions to upgrade from outdated records management ways to modern ones. While Chapter 2, Section 4 (Subsections 1-4) of the Traditional Institutions of Governance and Leadership Framework Act 23 of 2009 outlines the functions of traditional institutions, there is little detail regarding standards and guidelines for record keeping. 48,6% of respondents strongly disagreed with the statement: "there is a good relationship between municipalities and traditional institutions" while 31,1% disagreed and only 14,3% agreed.

Visits by senior leadership

The researcher determined if senior leadership at Boshega visits headmen/women and all of them responded no. Senior Leadership at Boshega does not visit Headmen/women to find out about their administrative duties in their respective communities. Instead, Headmen/women are the ones making constant visits to the royal kraal every Tuesday of the week. *Kgoro* (a Northern Sotho word for executive gathering between members of traditional councils and members of the community) is the main platform for executive meetings and mass communication. This suggests there is little oversight by senior leadership over records management practices of headmen/women and their respective councils.

Administrators
All the respondents (100%) indicated that the people responsible for administering traditional councils are referred to as *secretaries*. Their duties mainly include the writing and signing of official letters in collaboration with a chief or headman/woman, taking down minutes during meetings and filing in the case of the *secretary* based at the central office of senior leadership, who also uses a desktop computer and a filing system to create and store records. For *secretaries* stationed in headmen/women offices, the duties are limited to writing letters and taking down minutes using manual tools such as pens and notebooks. Refer to Figure 6 for a frequency distribution of offices. Therefore, it cannot be said that any form of real records management is taking place in traditional institutions of Ga Molepo; especially those led by headmen and women.

Corporate governance
According to the Traditional Institutions of Governance and Leadership Act 23 of 2009, municipalities are encouraged to cooperate with traditional institutions for functioning and administration. Looking at the Act, it is unclear as to the approach of the cooperation in terms of records management. For instance, while the study by Ngoepe and Van der Walt (2010) indicates there is a records management programme within the Department of Cooperative Governance and Traditional Affairs, no such programme could be found in the area that was surveyed.

Accountability and transparency

When asked whether traditional institutions are accountable and transparent, 18,9% strongly agreed while 75,7% strongly disagreed. Records such as published annual reports and financial statements are hard to come by in traditional institutions.

Offices, equipment and virtual storage facilities
Although most traditional councils indicated they have office space, the lack of equipment and tools to make these offices fully functional remains a huge obstacle. Thirty five respondents (10%) indicated they have an office although most of them are personal shelters turned into offices.

The figure above relates to the question in Section 2, Subsection 2.11 of the literature review pertaining to physical and virtual storage facilities to solve the challenges of records management and access to information in traditional institutions.

Records management

Although most respondents indicated their traditional councils have offices, many of them do not know anything about records management. It is therefore highly unlikely respondents know anything about or use modern formats of records management when they do not know anything about records management. This answers the question in Section 2, Subsection 2.2 of the literature review. 29,7% indicated they know about records management, while 70,3% said they do not. Refer to Figure 7 for a representation on the knowledge of records management. In addition, most respondents strongly disagreed with the statement: "All traditional councils keep records and manage them accordingly". Moreover, all thirty-five respondents pointed out record keeping as important.

Ways, methods and tools used to administer communities and perform records management

There are no indications of efforts to engage in records management using modern ways in traditional institutions – an answer to the question under Section, 2 Sub-section 2.2 in the literature review. Oral tradition (word of mouth) is still as common today as it was in ancient times. While emails could be helpful in terms of electronic records keeping for traditional institutions in Ga Molepo, the absence of networked virtual facilities and record centres prohibits the use of 'the internet of things'.

Ten respondents (10%) pointed out traditional councils rely on word of mouth for mass communication while seven respondents (7%) reveal notebooks and exercise books without carbon copies are used in the creation, storage and dissemination of records. Meanwhile, nine respondents (9%) official stamps are used to validate records created, especially those meant for correspondence with external organizations such as banks. The fact that only two respondents (2%) indicated official receipt books are seldom used implies financial transactions between residents and traditional councils are not consistently recorded for proof of payment. Only two respondents (2%) indicated they have computers and multifunctional printers and this implies manual handwritten records without virtual storage still dominate. Six respondents (6%) indicated the use of personal cell phones and one respondent (1%) uses a fixed landline telephone. While using a personal cell phone can be convenient, it would be hard to record and retrieve voice messages as it is possible with a fixed telephone landline.

Government's provision of resources

Government is still viewed as the "saviour" when it comes to issues of finance and traditional institutions are highly dependent on the directives of government. Out of the thirty five respondents, 78,4% strongly agreed that government should provide more financial resources to traditional institutions, 16,2% agreed while 5,4% disagreed. There general consensus is that the provision of financial resources would help traditional councils purchase essential equipment and tools used in the creation, storage and dissemination of records such as stationery, computers, printers and access to the internet.

Generation of own income

86% agreed that traditional institutions should come up with their own ways of generating income, 10,8% strongly agreed while 2,7% strongly disagreed.
A consistent cash flow would allow traditional councils to hire qualified personnel to manage records as well as purchase stationery and equipment such as computers and printers.

Community contribution

Moreover, it appears the African culture of collectivism is evolving as many feel the tradition of asking members of the community to contribute is no longer useful. The old age tradition of requesting community members to contribute monies to purchase stationery used to create, store and disseminate official documents such as letters is no longer deeply entrenched. 73,0% strongly disagreed traditional communities should help finance traditional institutions, 2,7% disagreed while 24,3% agreed.

Refer to Figure 12 for a graphical representation of a regression (path) analysis which indicates traditional institutions are highly dependent on the financial resources government makes available in order to improve on their current records management practices as highlighted in previous sections. Thus, the current records management practices are associated with the unwillingness of government to provide financial resources.

Government ⟶ finance ⟶ traditional ⟶ institutions
RM

Figure 12 is a representation of a regression (path) analysis of variables (section 4 subsection 4.17)

Conclusions and recommendations

Conclusions

There are no real records management practices by both Senior Leadership and Headmen/women in traditional councils of Ga Molepo given the findings of the study. The use of notebooks and exercises books bought over the counter indicates '*secretaries*' tasked with administrative duties attempt to create and keep records. However, such a practice could prove to be unsustainable in the long run without a steady supply of stationery. In addition, the use of notebooks without carbon copies is problematic and means most of the records created become untraceable once disseminated. Moreover, the heavy reliance on handwritten paper based records in traditional council offices means there is a high risk of losing records to hazards such as fire, mould and floods. Since only senior leadership at Boshega uses a computer connected to a multifunctional printer *albeit* without internet, most traditional councils do not use modern formats of records management. Due to the lack of awareness and the absence of guidelines and standards, there are no real modern records management practices in traditional institutions. Government needs to elaborate more on the record keeping function highlighted in the Traditional Institutions of Governance and Leadership Framework 23 of 2009. The designation of administrative duties to people referred to as *'secretaries'* indicates records management is not perceived as an organizational responsibility but one bestowed on individuals. As a result, the information culture amongst members of traditional councils could be referred to as centralised. It has been established traditional institutions in Ga Molepo do not use modern ways of keeping records and this speaks to their inability to function and administer their respective constituencies in a rapidly changing democratic South African society.

Recommendations

The following recommendations should be implemented as a solution for the records management challenges faced by traditional institutions given the findings of the study:

- A message to government: emphasis should be placed on capturing collective memory at grassroots level instead of managing records at government level only. Clear procedures and processes need to be put in place by government in order to assist traditional institutions manage records effectively.

- Since not much has been written on records management in traditional institutions, the findings of the study should be utilized to develop strategies in assisting traditional institutions to effectively manage records. To begin with, traditional institutions need to collaborate with the National Archives of South Africa and other similar institutions elsewhere in setting standards and procedures for the management of records.
- Government needs to provide more financial resources for physical and virtual facilities and equipment in traditional offices. This would help transform records management ways from manual to computerized in order to align with rapid technological changes in society.
- The Traditional Institutions of Governance and Leadership Framework 23 of 2009 (as amended) should be reviewed for the implementation of an effective record management programme. This would assist in the introduction of corporate governance

norms and values in traditional institutions records management practices.

- Traditional institutions need to find new innovative ways of generating income that can help acquire the necessary tools for administrative purposes. A heavy reliance on government for finance disadvantages the acquisition of essential equipment and tools needed for the effective management of records.
- Information professionals should volunteer their services on a pro bono or paid up basis for advice in the area of records management, especially to rural communities and their systems of governance.
- Young, skilled people need to feature in the administrative activities of traditional intuitions. Most of them fall within the category of millennials who are savvier with Information and Communication Technologies used in modern records management than previous generations.
- Follow up studies should be conducted on other aspects of records management in traditional institutions, in particular; to gain more insight into the perceptions, experiences and attitudes of traditional institutions towards modern records management and modern records management format

References

Adams, M. (2010). *The management of District Assembly records for development planning: implications for good governance, unpublished doctoral thesis*. Legon: University of Ghana.

Babbie, E. (2007). *The practice of social research*. Belmont: Thomas Wardsworth.

Bless & Higson-Smith. (1995). *Fundamentals of social research methods: an African perspective.* Cape Town: Juta & Co.

Crook, R. (2005). The role of traditional institutions in political change and development.

CDD/ODI Policy Brief (4).
Institute of Directors in Southern Africa. (2012, September, 15). King III Report. Retrieved from http://www.iodsa.co.za/?page=KingIII

Kemoni, HN. (1998). The impact of records centers on the management of public sector records in Kenya. *Records Management Journal*, *8*(1),55-65.

The World Bank. (2000). *Managing Records as the Basis for Effective Service Delivery and Public Accountability in Development: An Introduction to Core Principles for Staff of the World Bank and Its Partners.* London: International Records Management Trust.

Mensah, M and Adams, M. (2014). The nexus between corporate and records management in private and public hospitals in Ghana. *Records Management Journal*, *24*(1),32-55.

Mihiotis, ADA. (2012). The contribution of records management to good governance. \ *The TQM Journal 24* (2),123-141.

Mnjama, N. (2004). Records and information: the neglected resource. *ESARBICA Journal, 23*,33-44.

Motsi, A.(2004). The nature of documentary materials in Africa and challenges to Preserving them. *ESARBICA Journal*, *23*,62-67.

Muchefa, L. (2012). *Politicization of memory and the creation of dark histories in Zimbabwe.* Harare: National Archives of Zimbabwe.

Nengomasha, CT. (2013). The past, present and future of records and archives management in sub-Saharan Africa. *Journal of the South African Society of Archivists*, *46*,1-11.

Ngoepe, M. (2014). The role of records management as a tool to identify risks in the public sector in South Africa. *South African Journal of Information Management, 16*(1,1-8.

Ngoepe, M and Van der Walt, T. (2010). A framework for a records management programme: lessons from the Department of Cooperative Governance and Traditional Affairs in South Africa. *Mousaion 28*(2),82-106.

Ngulube, P. (2001). Guidelines and standards for records management education and training: a model for Anglophone Africa. *Records Management Journal*, *11*(3),155-173.

Phago, KG and Netswera, FG. (2011). The role of traditional leadership in a developmental state: the case of Greater Sekhukhune District Municipality of South Africa. *Journal of Public* Administration, *46*(3),1023-1038.

South Africa. (1996). *The Constitution of the Republic of South Africa 108 of 1996*. Pretoria: Government Printer.

South Africa. (2003, December, 19). Traditional Leadership and Governance Framework Act 41. Retrieved from http://www.gov.za/sites/www.gov.za/files/a41-03.pdf

South Africa. (2010, January, 25). Traditional Leadership and Governance Framework Amended Act 23 of 2009) . Retrieved from http://www.gov.za/sites/www.gov.za/files/a23_2009_0.pdf

Svard, P. (2014). The impact of information culture on information records management. *Records Management Journal 24* (1),5-21.

The South African Pocket Oxford Dictionary. 3rd Edition. Cape Town: Oxford University Press, 2006.

Thomas, G. (2013). *How to do your Research Project: a guide for students in Education and Applied Sciences*. London: Sage.

THE PLACE OF RECORDS IN COMBATING CORRUPTION IN SOUTHERN AFRICA: A STUDY OF BOTSWANA AND ZIMBABWE'S ANTI-CORRUPTION COMMISSIONS

Peterson Dewah
Lecturer - National University of Science and Technology: Department of Records and Archives Management

and

Keneilwe Margaret Porogo
Senior Records Manager, Ministry of Minerals, Green Technology and Energy Security, Botswana.

Abstract

No nation is immune from corruption and it is the poor in the developing countries that suffer the most due to the abuse and misuse of resources. Southern Africa has joined other progressive states in confronting the scourge of corruption. Organizations, regardless of their sizes, document their activities during business transactions. This study therefore sought to investigate the extent to which such records are useful in fighting corruption trends in the two neighboring states of Botswana and Zimbabwe. General trends in corruption indicates that out of 176 corrupt countries in the world, Botswana is ranked 35 while Zimbabwe is ranked 154 (Transparency International's Perception Index Data 2016). The study surveyed the Directorate on Corruption and Economic Crime (Botswana) and the Zimbabwe Anti-Corruption Commission (ZACC) (Zimbabwe). Using desktop research, extant literature and content analysis of the two anti-corruption commissions' reports, results indicate that while records are a key resource in combating corruption in both nations, there are however other crucial factors that claim a spot in fighting corruption. The factors include political will to implement the constitutional rules; appropriate application of rule of law, procedures and regulations; and active participation of the citizens. Consequently, the researchers have recommended that there should be proper recordkeeping in both public and private institutions; the police force should enforce the countries' rules; anti-corruption commissions should serve everyone and not their masters; remunerate workers well and in time, among other recommendations.

Keywords: Corruption; DCEC; Records; Recordkeeping; Rule of law**;** ZACC

Introduction and Background to the Study

Corruption hurts all countries, in every region of the world. Corruption may be described as 'Soliciting or promising, giving or receiving, offering or accepting, as a public officer, a bribe (i.e. valuable consideration as described in Section 23 of the CEC Act of 1994) for carrying out or not carrying out official duties and responsibilities because of being influenced by the bribe (Corruption and Economic Crime Act, Cap 08:05). The UNDP (2004: 5) defines corruption as an unethical act undertaken to derive or extract personal rewards at the expense of the interests of the country through bribery, extortion, influence peddling, nepotism, fraud, speed money or embezzlement. It is not surprising that the number of anti-corruption initiatives around the world has increased dramatically over the past decades. Frequently, anti-corruption initiatives are not considered to deliver on the high expectations bestowed upon them. According to the Botswana Gazette (2017:2) Botswana has slipped to the 35th place on Transparency International's 2016 Corruption Perceptions Index. Corruption is presently one of the major challenges facing humanity (Seleke 2016).

The Directorate on Corruption and Economic Crime (DCEC) was set up in 1995 to respond to a number of lapses in ethical governance in Botswana. Corruption in Botswana has reached cancerous proportions to the extent that it has distorted the process of national development in the country through a plethora of irregularities. The fight against corruption in public health, education, pensions, land, and judiciary all depend upon well-kept and well managed records and information (World Bank 2011). Botswana is one of Africa's leading performers in anti-corruption. Since 1998 when Botswana was first assessed through Transparency International's Corruption Perception Index (CPI), the country consistently came out as Africa's leading anti-corruption nation in terms of the CPI. Globally, Botswana remains consistently in the 25% least corrupt countries of the world. Though Botswana has earned a reputation for controlling corruption, the negative and frequent newspaper reports and allegations of corruption are becoming worrisome.

The Directorate on Corruption and Economic Crime (DCEC) established Anti-Corruption Units during the year 2010, in various government ministries and departments to curb and eradicate corruption (DCEC Newsletter, 2016). Mwanda (2013) noted that the Directorate uses a three-pronged attack strategy borrowed from the Hong Kong ICAC. However, Botswana has been on a free fall Transparency International ranking since the year 2012. State of the Nation Address by His Excellency the President of the Republic of Botswana (2012) indicates that the conviction rate for matters brought before courts stands at 71%. In 2012, the total number of cases under active investigation amounted to 1476. The number of cases classified for investigation increased by 99 from 671 in 2009 to 770 in 2010 which represents a 14% increases (Rudolph and Lysson 2011).

Corruption is rampant in Zimbabwe. In 2014 Zimbabwe was ranked 156th of 176 most corrupt countries. A 2014 local survey indicated that 77.4 % of the respondents professed that they had been asked for a bribe (Transparency International Zimbabwe 2014). Corruption in Zimbabwe can be traced back to the nascent years when, due to political and social developments at the time, the ruling party started to consolidate power. It is shared knowledge that you do not conduct business in Zimbabwe unless you are 'known' by those in the ruling party. Corruption has become the way through which one conducts successful business or rises through the political ranks. The Zimbabwe Anti-Corruption Commission (ZACC) was established on the 8th of September 2005 in terms of Chapter 13, Part 1 of the Constitution of Zimbabwe**.** It is an independent commission created with a mandate to curb and combat corruption and crime in all sectors of the economy. Section 255 of the Constitution stipulates that ZACC has the following functions;

- to investigate and expose cases of corruption in the public and private sectors;
- to combat corruption, theft, misappropriation, abuse of power and other improper
  conduct in the public and private sectors;
- to promote honesty, financial discipline and transparency in the public and private
  sectors;
- to receive and consider complaints from the public and to take such action in regard to
  the complaints as the Commission considers appropriate;
- to direct the Commissioner-General of Police to investigate cases of suspected corruption and to report to the Commission on the results of any such investigation;
- to refer matters to the National Prosecuting Authority for prosecution;
- to require assistance from members of the Police Service and other investigative agencies of the State; and
- to make recommendations to the Government and other persons on measures to enhance integrity and accountability and prevent improper conduct in the public and private sectors.

The World Bank Group (2016) considers corruption a major challenge to its institutional goals of ending extreme poverty by 2030. Records and information provide verifiable evidence of fraud that can lead investigators to the root cause of fraud. There is no way we can wipe out corruption without good records management as a point of reference for evidence of transactions (Okello-Obura, 2007). The World Bank (2000:5) understands a well-managed records and information system to provide a cost-effective deterrent to fraud and corruption. To minimize corruption, government and organizations should redirect their focus towards promoting good records and information management practices as one of the corruption prevention strategies, instead of directing a lot of resources towards investigating and detecting corruption (Kanzi, 2010). This would make a significant difference, as there would be fewer corruption and fraud cases to investigate when proper records and information management systems are entrenched within an organization.

In Botswana Public Sector, there are some attempts being made in some of the departments such as Directorate on Corruption Economic Crime in which there are surveillance cameras installed in the entire organisation. Employees can only access their offices through use of biometric verification such as use of their thumbs to open their offices. The main challenge is that they are still using the manual system to manage their records and tracking of files within the offices is problematic as some of the investigators have a tendency of taking case records with themselves and they are always lost, thus led to the public winning cases due to lack of records and evidence. The Botswana government through BNARs made initiatives to strengthen record administration in Botswana. The National Archives and Records Services is charged with the responsibility of providing records and information management service to government ministries and departments and local authorities. It provides the same to parastatals on advisory basis. BNARS' mandate is to ensure that public records are created, used, maintained and disposed of to promote efficient and economic handling of information. The Botswana National Archives and Records Services as vested with advising the entire Public Sector in managing records.

In the case of Zimbabwe attempts have been made to professionalise the records system in order to strengthen the record administration. This has encouraged the introduction of records and archives education in tertiary institutions such as universities and technical colleges (Tsvuura and Mutsagondo, 2015). Records personnel with appropriate qualifications have been promoted. Those with better qualifications have received some notches. As mandated by the National Archives of Zimbabwe Act (1986) the NAZ oversees the professional administration of public sector records by providing storage facilities for semi-current records (those under 25 years), offering file reference service, conducting records management surveys, training registry staff through workshops and seminars, facilitating and supervising the destruction of classified records, transferring records which have been identified for their permanent historical, evidential, legal, fiscal and research values to the Public Archives.

Statement of the Problem

The corruption scourge in the SADC is serious, rife and rampant. Data from the Transparency International's Corruption Perception Index (2016) ranks the two studied Southern African countries out of 176 countries in the following order Botswana (35 down from 28 in 2015), Zimbabwe (154 down from 150 in 2015). In the case of Botswana's anti-corruption strategy, proper recordkeeping, albeit important, is not recognized as essential to the country's anti-corruption strategy (Keakopa and Keorapetse 2012). Many institutions in Botswana tried to fight corruption but have been compromised as the Directorate on Corruption and Economic Crime (DCEC) is too weak and lacks independence. Indeed, the fight against corruption in public sector will depend upon well-kept and well managed records and information (World Bank 2011). Zimbabwe has a long history of corruption in the post-colonial era with prominent examples including the Willowgate, the VVIP Housing Scheme, the War Victims Compensation Fund scandals and, recently, Salarygate scam, among others. Consequently, this study sought to investigate how the Directorate on Corruption and Economic Crime (DCEC) in Botswana and the Zimbabwe Anti-Corruption Commission (ZACC) utilize records and information to fight various forms of corruption**.**

Objectives

Specifically, the study sought to answer the following questions:

1. What is the extent of how Anti-Corruption Commissions use records to fight corruption?
2. Besides relying on records where else would Anti-Corruption Commissions get information related to corrupt activities?
3. Do Anti-Corruption Commissions collaborate with other private and public institutions (police, intelligence, banks, Immigration) to fight corruption?
4. What anti-corruption rules and regulations are in place
5. How are the citizens made aware of the legal implications of corruptions?

Methodology

The study surveyed the Directorate on Corruption and Economic Crime (Botswana) and the Zimbabwe Anti-Corruption Commission (ZACC) (Zimbabwe) using desktop research, extant literature and content analysis of the two anti-corruption commissions' reports and interviews. Data collected through questionnaires was analysed to obtain some descriptive statistics while qualitative was analysed using objectives to derive particular themes pertinent to the study. In Botswana five (5) ministries and departments participated in the study. In Zimbabwe data was gathered from the ZACC reports.

Findings and Recommendations

The research interpretation and discussions are based on the research objectives. For ethical reasons the names of departments and ministries that participated in the study will not be revealed.

The extent of how Anti-Corruption Commissions used records to fight corruption

The respondents were asked how they use records to fight corruption. In Botswana the findings of the study showed that the departments surveyed used records on daily basis to curb corruption on their institutions. These departments recognize sound records management as a priority area to keep constant checks on malpractices of corruption practices as there were effective Corruption Prevention Committees. The other 3 ministries have attempted to establish Corruption Prevention Committees but they were not effective.

The Patriot Newspaper (November 2016) revealed that Botswana has a poor project management; Morupule A refurbishment which is expected to be complete December 2017 won't be able to meet the deadline rather extended to 2019 and thus additional costs. Due to poor records management, the scope of the project changes every day as explained by the site managers. However, this is a great sign of tempering with the requirements as stated by the coordinator, thus changing the original records intentionally by compromising its effectiveness and these records could not be relied upon in the court of law. The LAPCAS system has led to delays and cancellations of some components of the project and the government will lose millions of pulas due to incorrect information on the registered title bonds and deeds with the Deeds Registry.

The Zimbabwe Anti-Corruption Commission, as an anti-graft body, acquired confidential documents used in the fraud investigation against Higher and Tertiary Education, Science and Technology Development Minister Professor Jonathan Moyo and his deputy Dr Godfrey Gandawa where the two are alleged to have abused $400 000 Zimbabwe Manpower Development Fund (Zimdef). The ZACC followed due procedure to get the documents during its investigations.

Literature also reveals that the ZACC was instrumental in unearthing the FIFA match-fixing scandals of 2010/2011,4 in which the local football authority, the Zimbabwe Football Association (ZIFA) was implicated. Electronic mails (e-mails) and other documents identified during the investigations led to the arrest and prosecution of the former CEO of ZIFA of Henrieta Rushwaya. The accused was eventually acquitted but several players, coaches and journalists were implicated in the criminal trial, and a FIFA-mandated tribunal found several of the accused persons guilty of impropriety.

In the case of Botswana, anecdotal evidence from personal observations by researchers showed that records management has been incorporated on the ministries' strategic plans and records management units where officers who had diploma and degree qualifications, had clear line of authorities and they maintained records in accordance with Botswana National Archives Act of 2007 and Records Management Procedures of 2009. One interviewee revealed that *"records management officers were also the focal officers of the corruption prevention committees in those departments and officers were always sensitized on the importance of records."*

At one Botswana ministry one interviewee revealed that *"Procurement Process Map were developed as there were lots of irregularities in the award of procurement tenders, overpayment of and no delivery of some goods by the suppliers and as such evaluation committees have been established which were responsible for assessing all the quotations for all the tenders and procurement officers are not the members of that committee. Every time when a tender is closed an assessment is conducted and the committee creates records which normally shows how assessment was conducted and the company which has won the tender after that the officers assessment are expected to sign in those reports as a true copy and file records with the records management unit."* Personal observations by the researchers showed that records management processes at 2 departments have been re-engineered to enable records officers to know what they are supposed to do on their daily basis.

Out of five ministries and departments in Botswana only 2 revealed that the corruption prevention committee has adopted holistic approach to addressing corruption. This involved preventing it, by building transparent, accountable systems of governance and improving more public integrity by strengthening the personal ethics of their employees. Out of the 4 respondents interviewed, 3 of them revealed staff are equipped with sound ethical culture supported by appropriate policies, procedures and strategies that prevent corruption as well as carrying out periodic assessments of fraud and corruption risks and staff are sensitized on fraud and corruption. This was also confirmed through personal observations. Despite attempts being made at Department of Energy the Mmegi Newspaper 2017:3 states that P326 million biggest financial scandal in Botswana. This money laundering case involved Kgori capital, Department of Energy and Directorate of Intelligent Security in which they mismanaged the National Petroleum Fund to conduct businesses which the fund was not made to do.

In Botswana, the study revealed that at Department of Public Service Management it emerged that by the year 2014 the department had a problem of ghost workers and through establishment of the anti-corruption units a new system called Human Resource Management System (Oracle) which managed the ghost workers was introduced. The system has in built control measures to guard against anomalies and can be easily monitored as it is computerised (Seitshiro, 2016). The department issued a circular to all Ministries and Departments to use unique identifier thus identity number or passport number for all personal files. All the records were opened with identity numbers across the Public Sector and that enhanced the service delivery. This has assisted the Botswana government to identify the culprits who have been stealing the government money. One interviewee revealed that "*there are so many unemployed graduates so they have created a database to manage their recruitment of Botswana Public Sector and this has reduced favoritism, conniving and bribery of officers as the graduates are expected to log on the system and complete the forms and submit online.*" Masokola, (2015) reported that the Department of Tertiary Education Financing Director quit his job by December 2014, as department continued to experience perennial problems including most notably ghost students. This is one of the good records and information management system which has assisted all the Ministries and Departments to use only one unique identifier thus identity card number across for personal files of employees.

Findings at 2 ministries in Botswana indicated that the use of records to curb corruption practices were rare as there were no anti-corruption units and committees were yet established. Nevertheless, one interviewee revealed that at one hospital, *"it is common for records to go missing as their records are in disarray thus they are kept on the floors and retrieval is a challenge whenever needed."* The findings show that corruption continues to rise at this hospital, as there are lots of missing records and lack of records management policy so there is nothing that binds them on the usage of records.

In Zimbabwe the ZACC has also been invited by several government ministries and departments to undertake forensic audits of their accounts. This shows the power of good records and information management practices thus if these practices were not there the government public relations officers would not have unearthed the rot in the government ministries and agencies.

Other sources of information on corrupt practices/activities.

The second objective was to find out, besides relying on records where else would Anti-Corruption Commissions get information related to corrupt activities. The study revealed that the Anti-Corruption Commissions receive reports relating to corrupt activities in different ways. Staff lodge reports to the Directorate on Corruption and Economic Crime (Botswana) and the Zimbabwe Anti-Corruption Commission (ZACC) acting on their official or personal capacity or by stakeholders who have witnessed or directly or indirectly experienced a particular suspicious activity taking place.

Reports studied and interviewees indicated that information may be received through telephone, cellphones of departments have established toll free lines and emails dedicated to receiving anti-corruption units reports as that ensure confidentiality, anonymity and ease of access. Personal observation showed that those toll-free numbers did not have officers managing them and people in regions and departments, situated away from the head office have difficulty in accessing anti-corruption services.

***Anti-Corruption Commissions' collaboration with other institutions in fighting corruption*.**

The third objective was to examine Anti-Corruption Commissions' collaboration with other private and public institutions (police, intelligence, banks, Immigration) to fight corruption. The study showed that there are effective efforts made regarding cooperation amongst the anti-corruption units, police, intelligence, banks, Immigration to fight corruption. Researchers' observation showed there were some reports compiled on monthly basis regarding the investigation and pursuit of corruption and money-laundering cases. Some reports showed the Anti-Corruption Commissions in both countries, work closely with the national Police. One interviewee at ZACC said, *"Section 254 of the constitution constitutes the Zimbabwe Anti-Corruption Commission and the commission relies on the police to effect arrests."*

Alleged corruption cases received by the police are referred to Directorate of Corruption and Economic Crime for investigation (DCEC) who rely on the police for support in specific situations. In Botswana, personal observations showed monthly reports compiled by the Police and Directorate of Corruption and Economic Crime on corrupt cases.

Identify the anti-corruption rules and regulations

With regard to anti-corruption rules and regulations content analysis and study of literature identified anti- corruption policies at department of Green Technology and department of Public Service Management Service. For instance, at department of Green Technology and Energy Security it emerged that there have declaration of asset guidelines which employees have to comply all the time they receive gifts from customers. Researchers were shown registers that were used for registering gifts all the time upon receipt by officers.

Literature surveyed revealed that the two countries have a battery of laws that speak to corruption. For instance, Botswana has the following laws to fight corruption: The Corruption and Economic Crime Act (1994) established the DCEC and criminalizes specific corrupt acts and practices, including active and passive domestic bribery; embezzlement; trading in influence; abuse of functions; illicit enrichment; private sector bribery; and obstruction of justice. The Penal Code also criminalizes certain corruption crimes, including embezzlement, misappropriation or the diversion of property by a public official; the falsification of books and records; abuse of functions; private sector bribery; private sector embezzlement; and obstruction of justice. The Proceeds of Serious Crime Act (1990) criminalizes the laundering of proceeds of serious offences. The Public Procurement and Asset Disposal Act (2001)21 aims to ensure an open, fair, and transparent tendering according to commercial practices. The Act established the Public Procurement and Asset Disposal

Board,22 an SOE charged with regulating public procurement matters in Botswana.

As for Zimbabwe, the Anti-Corruption Commission Act (2004)59 sets forth the scope of responsibilities for the Zimbabwe Anti-Corruption Commission. The Criminal Law (Codification and Reform) Act (2004) establishes bribery and corruption offences, including domestic active and passive bribery and abuse of functions, as well as embezzlement in the public and private sectors. The Audit Office Act, along with the Constitution and the Public Finance Management Act, provide the framework for Zimbabwe's supreme audit institution, the Comptroller and Auditor General. The Procurement Act of 200163 established the State Procurement Board, which is responsible for public procurement contracting on behalf of procuring entities, to supervise procurement proceedings, and to investigate possible violations of procurement procedures. The Serious Offences (Confiscation of Profits) Act (1990) provides for the confiscation of money and property used in or in connection with, or as proceeds from, crime. The Pubic Finance Management Act (Chapter 22, Art. 19) provides a legal framework for the financial management, corporate governance and auditing requirements for SOEs. The Reserve Bank Act (Chapter 22, Art. 15) regulates for the regulation, supervision and conduct of SOEs in the financial sector. The Bank Use Promotion and Suppression of Money Laundering Act (Chapter 24, Art. 24) deters money laundering by SOEs, specifically those in the financial sector.

How citizens are made aware of anti-corruption

It emerged that both the DCEC and ZACC do carry out awareness campaigns to sensitize the public about the evils of corruption and the pieces of legislations that speak to corruption. The anti-corruption commissions also make use of local print media, radio and television broadcasting to ensure that the public are aware of the vice. Among the main achievements of the DCEC are its successful coordination of a campaign amongst the general public against corruption and a high conviction rate of investigated cases. For illustration, the DCEC report (2012: 19) confirms that as at December 2012 a total of 135 cases were brought before the courts compared to 110 for 2011. In Botswana Chikumbudzi (2014) urged all councils, district commissioners and tribal administrations to double their efforts and urgently resuscitate their Corruption Prevention Committees (CPC) because it was through such committees that the ministry planned to fast track sensitization of staff and the general public on corruption prevention strategies.

The extent of their effectiveness in combatting corruption

Although not well documented, corruption has raised its ugly head in Botswana as the National Petroleum Fund is being mismanaged by senior officials and the poor will still remain poor and the rich will be richer (Mmegi Newspaper, 2017:3). In its 2016 Government Defence Anti-Corruption Index, the anti-

corruption watchdog scored Botswana way below the 50 percent pass mark on defence and security corruption. With a score of between 16.7 percent and 33.2 percent Botswana was accorded an "E" grade which places the country's defence and security outfits in the banding bracket of "very high corruption risk". Records show that between 2012 and 2016 Botswana has dropped from position one to position five in Africa and from position 20 to position 60 in the world on the index of accountability and constrains on government powers.
From the literature surveyed it emerged that the ZACC's stability is often affected by political interference, lacks an independent budget posing serious challenges and has often incapacitated the execution of its mandate. ZACC has investigated and found a lot of corruption but politicians frustrate its efforts to eradicate the problem by promoting a culture of impunity. Cases have died a natural death before any prosecution. Content analysis indicated that this has been interpreted in some quarters as further indication of the lack of political will by the state to support the commission's core mandate of fighting against corruption. There is supposed to be a flow from ZACC to Zimbabwe Republic Police (ZRP) and National Prosecuting Authority but exposed cases are not followed.

In spite of the available comprehensive constitutional and legal framework, the ZACC has struggled to effectively combat or contain corruption due to a number of factors that include lack of resources (both financial and human) and its overlapping mandate and those of its collaborating partners like the police, the judiciary and the prosecuting authority that further compromise its performance, a lack of political will by those in power, who are themselves the major culprits in corruption.

Recommendations

The paper is based on the study that aimed at investigating the place of records in combating corruption in Botswana and Zimbabwe through their anti-corruption commissions. It sought to address the following research questions: What is the extent of Anti-Corruption Commissions' using of records to fight corruption? Besides relying on records where else would Anti-Corruption Commissions get information related to corrupt activities? Do Anti-Corruption Commissions collaborate with other private and public institutions (police, intelligence, banks, Immigration) to fight corruption? What anti-corruption rules and regulations are in place and how are the citizens made aware of them?

The study concluded that corruption undermines good government, fundamentally distorts public policy, leads to the misallocation of resources, harms the public sector and particularly hurts the poor. All departments should build capacity in the development and planning of strategic anti-corruption policy and programmes. Effective measures to prevent, detect, investigate, punish, and control corruption, including the use of evidence-gathering and investigative methods. The study recommends that ministries and departments should create awareness through workshops and training for anti-corruption groups on how records can be manipulated and misused. The study recommends that government registries should employ records personnel with appropriate academic qualifications, competencies and requisite skills to professionally execute records management duties. Access to records in the registry units must be restricted to professionals. Records must not spend unnecessary time with action officers. There is need to further improve the security system of records holding rooms and offices. All these assists in the anti-corruption fight. The Governments of Botswana and Zimbabwe need to implement adequate legislation such as the Declaration of Assets Law, Freedom of Information and Whistle Blower Protection Act in order to support the DCEC and ZACC in carrying out outlined mandates of fighting corruption. In addition, there is a need to strengthen the available protection of reporting persons, including through a comprehensive Whistleblower Act. Moreover, the Botswana and Zimbabwe Governments need to enforce the rule of law in line with the United Nations Convention against Corruption (UNCAC). In this case, application of laws must not be done on partisan lines in order to curb corruption. The two Governments should emphasize the importance of records in fighting corruption. Besides there is need to ensure that there is political will and commitment in the battle against corruption to encourage quality of governance in the region.

References

Babbie, E & Mouton, J. (2001) The practice of social research. Cape Town: Oxford University.

Botswana Daily Newspaper (2016) Anti-Corruption Units Growth Vital. https://www.facebook.com/Botswana.Government/photos/pb.148228411926492.-2207520000.1467271206./1030671930348798/?type=3 (Accessed 28 March 2017).

Chikumbudzi. L. (2014) Botswana Daily Newspaper, All Must Fight Corruption. http://www.dailynews.gov.bw/mobile/news-details.php?nid=11843&flag= Accessed 2 April 2017.

Kanzi N. (2010) An investigation of the role of records management with specific reference to Amathole District Municipality Noluvuyo Kanz. Dissertation submitted in partial fulfillment of the requirements of the Master's degree in Public Administration in the Faculty of Arts at the Nelson Mandela Metropolitan University, available at: http://www.nmmu.ac.za/documents/theses/ MAP%20Treatise%20for%20N.Kanzi.pdf, (Accessed 3 April 2017).

Keorapetse D.L and Keakopa SM. (2011) Records management as a means to fight corruption and enhance accountability in Botswana. Paper presented at the XXI Bi-Annual East and Southern Africa Regional Branch of the International Council on Archives (ESARBICA), General Conference on Access to Information: Archives and Records in Support of Public Sector Reform in Context, Maputo, Mozambique, 6–10 June 2011. www.ica.org/download.php?id¼1401 (Accessed 22nd December 2016).

Masokola. A. (2015) The Weekend Post Newspaper, DTEF Director Ejected. **http://www.weekendpost.co.bw/wp-news-details.php?nid=405** (Accessed 2 April 2017).

Seitshiro, K. (2016*)* No More Ghost Employees at Government Enclave. http://www.sundaystandard.info/no-more-ghost-employees-government-enclave (Accessed 02 March 2017).

Sunday Standard Reporter (2017) Watchdog Wags Warning Finger at Khama. http://www.sundaystandard.info/watchdog-wags-warning-finger-khama (Accessed 28 March 2017).

The World Bank (2016) Anti-corruption. http://www.worldbank.org/en/topic/governance/brief/anti-corruption (Accessed 3 April 2017).

Tsvuura, G. and Mutsagondo, S. (2015). The role of tertiary education institutions in the

development of the records and archives management discipline in Zimbabwe. *International Journal of English and Education* 4(2):458-470.

University of Leicester (2012) Presenting numerical data: study guide. http://www2.le.ace.uk (Accessed 18 January 2017).

THE CONTRIBUTION OF EFFECTIVE ELECTRONIC RECORD MANAGEMENT TO FIGHT CORRUPTION: THE EVIDENCE FROM SELECTED PUBLIC SERVICE OFFICES IN TANZANIA

Juliana J. Manyerere
Librarian
Institute of Rural Development Planning
Dodoma,
Tanzania

and

David J. Manyerere
Lecturer – Development Studies
Mkwawa University College of Education
University of Dar es Salaam (Mkwawa Campus)
Tanzania

Abstract

It is undeniable fact that corruption practices in both public and private domains hinder the full realization of development of people in various aspects, in social, economic and political fronts. This paper attempts to show the contribution of effective electronic-record management systems to fight corruption in Tanzania particularly in hospitals, the judiciary and police force in order to ensure effective and efficient delivery of services. The paper is based on an extensive desk review of secondary data from relevant sources. The results show that there is a significant difference between the use of e-record management and its non-use in terms of addressing corruption practices done by public officials in the studied sectors. Special attribution is derived from the use of Information and Communication Technology (ICT) devices like Electronic Fiscal Devices (EFDs) machine, mobile telephones, Electronic Health Records (EHRs) systems and the like. This paper concludes that, in order to fight corruption, there is a need to establish and promote the use of electronic record management systems not only in hospitals, judiciary, police force, but also in all sectors of the economy within both public and private domains. This is essential to facilitate effective delivery of services to the citizens hence, address corruption practices. The study recommends further, that the government should take a leading role in terms of putting initiatives to ensure e-payment record management systems is adopted and used by all individuals as well as both public and private institutions throughout the country to promote sustainable socio-economic development.

Keywords: *Record keeping; E-record Management; Corruption; Public service social services; Tanzania*

Introduction

Development of science and technology in this era of globalization unfolds several new opportunities that provide significant benefits to the lives of the majority of people in both developing and developed countries (Crow, et al., 2017; World Bank, 2012; Yusuf& Afolabi,2010; Velicogna,2007). The effective and timely access to social services on the part of citizens from their respective governments is one of the benefits brought by Information and Communication Technology (ICT) facilities such as mobile phones and electronic fiscal devices. Likewise, the use of such electronic gadgets is crucial to improve effective record management as opposed to manual systems that can be easily tempered by an individual for his/her own benefit. As such, through the use of ICT facilities, it becomes easy to follow up how public officials render services to the citizens and record all the transactions done. Hence, it is expected that such development in improved record management is relevant to ensure transparency in the way the government conducts its business and hence, help to deal with corruption practices among its employees. However, while most of the developed countries were able to fully take the advantage of these new opportunities manifested in effective use of ICT, the majority have been left behind in making significant achievement on effective adoption and use of ICT facilities (Mlima, 2013). For instance, among the major challenges facing many government institutions in Tanzania such as Tanzania Revenue Authority (TRA)[1], is poor record management. It is stated that unqualified records officers, poor use of ICT facilities as well as poor organizational management records is one of the reasons (Ndemanyisho, 2014).

Broadly, corruption refers to an abuse of public office for private gain. Corruption encompasses abuses of position of government officials such as embezzlement and nepotism, as well as abuses that link both the public and private actors such as bribery, extortion, influence peddling, and fraud. In the context of this study we adopt the most perennial definition of corruption which is neat and simple i.e. *the abuse of public office for 'private economic gain'* (Rose-Ackerman & Palifka, 2016; World Bank (1997). While there are no enough evidence of existing petty corruption among rich nations, most of the developing countries are subject to the effects of both grand and petty corruption from within their countries as well as from outside (Mashali, 2012).

[1] Tanzania such as Tanzania Revenue Authority (TRA)[1], is one of the key institutions that collect revenues to facilitate socio-economic development of the country

While Tanzania has been undertaking several steps on the use of ICT facilities which led to a number of positive outcomes on social, economic and political aspects, more is needed to be done in terms of addressing corruption among officials working in various public institutions (Transparency International, 2015; Trade Economics, 2017). In this context, the paper focuses on examining the contribution of electronic record management to fight corruption problems in the police force, judiciary and hospital services. The idea of this topic arise from the influence of earlier findings demonstrating a close link between ICT use and improved government undertakings (Asonibare & Akaje, 2015; Hope, 2016, 2017; Samanta & Sanyal, 2016; Oyegoke, 2013; Ruxwana et al., 2010; Nyasha, et al., 2012). These include but not limited to reduction of corruption, effective health management systems in health sector, effective and efficient delivery of justice in the courts of law, as well as the increase of revenue collection timely provision of services which has a positive impact on addressing corruption. According to Klitgaard (1988:75), the basic ingredients of corruption include government monopoly, discretion in interpreting 'laws', in deciding who is eligible for benefits, and what constitutes proper documentation and procedure and last but not least is the lack of direct accountability. In the context of this research work the focus is on examining the extent to which proper documentation and procedures (through electronic record management systems) on the part of selected government institutions in the course of providing services to her citizen's help to fight corruption. The selections of these were based on their importance in public services delivery. According to services delivery survey data by Shar and Schacter (2004), in Tanzania 62 per cent of bribe paid were in the police, courts, tax services and land offices.

Literature Review

A Survey of Literature on Corruption and Its Impact

Gordon and Miyake (2001) are of the view that there is no single definition of corruption. In this regard, the concept corruption lends to multiple definitions and interpretations. According to the Samanta & Sanyal (2016), corruption refers to the offering, promising, or giving something in order to influence a public official in the execution of his/her official duties. On the other hand, Carmichael (1995) notes that apart from money, bribes may include other socio-economic advantages like access to scholarship for one's child to any education institution or favorable publicity. Corruption is defined by the World Bank and Transparency International (TI) as "the misuse of public office for private gain."[2] As such, it involves the improper and unlawful behaviour of public-service officials, both politicians and civil servants, whose positions create the opportunities for the diversion of money and assets from the government to them and their accomplices. Offering and accepting or promising any monetary or nonmonetary advantage with the intent to influence decisions (Pacini, et al., 2002; Becker et al., 2013).

Corruption has a number of negative impacts to the community and it distorts resource allocation and government performance. Indeed, the causes of its development are many and vary across countries. Among the contributing factors are policies, programs and activities that are poorly conceived and managed, failing institutions, poverty, income disparities, inadequate civil servants' remuneration, and a lack of accountability and transparency. As highlighted from the outset, this paper focuses on examining the contribution of electronic record management to fight corruption in some selected public service offices in Tanzania. Given its focus, it is imperative to understand the concept of electronic record management to shape the work into a relatively better context. Shepherd and Yeo (2003:2) define record as any piece of documented information regardless of their physical format or storage medium, created or received and maintained by an organization or individual in the transaction of business and kept aside for preservation as evidence of some specific activity.

According to ISO (2001), records management is a field responsible for the efficient and systematic control of creation, receipt, maintenance, use, and disposition of records including; processes for capturing and maintaining evidence of and information about business activities and transactions. Electronic record management refers to the system in which data files are created and stored in digitized form through the use of computers and applications software (The California Department of General Services (DGS and CalRIM,2002). In this regard, records are stored on various magnetic and optical storage devices which are products of computers and computer software. The electronic devices assumed to support effective services delivery including but not limited to various forms of electronic fiscal devices, mobile phones, and health management systems. In fact electronic payment solutions have been regarded as important tool devices to reduce if not to prevent chances of corruption practices while collecting government revenues or managing various operations undertaken by different government agencies.

[2] The World Bank, Helping Countries Combat Corruption: The Role of the World Bank, Poverty Reduction and Economic Management Network, September 1997. See pages 19-20 on definitions of corruption.

Certainly, in several occasion unethical public servants are found to be tempted to engage in corruption practices for their private gains in the cause of delivering of services to the citizens. Similarly, in many countries, developing countries in particular, individuals seeking public services may be tempted to maneuver in order to get access to such services due to many reasons causing them to opt for the use of wrong channels. For instance, applicants of driving licenses, building permits, birth certificates, or even health services such as medical treatment in the hospital or justice seekers in the judicial hearings, may be forced or tempted to offer a surcharge from civil servants in order to compete for limited available services and resources. As a result, this denies other peoples' rights in terms of equality in accessing to social services and timely provision of services. In addition, when corruption is embedded among high level officials in the government, chances of poor quality or unavailable service is so apparent (Rose-Ackerman et al., 2016). A survey of literature on the role of electronic record management systems in fighting corruption unveils a number of issues regarding effective ways to address such challenges. The use electronic record management such as e-payment systems and Closed-Circuit Television (CCTV) and Body Worn Cameras (BWCs)can help to combat corruption. Through monitoring government officers' practices in order to ensure that they observe ethical codes of conducts while performing their duties. A good example is the embracing extensive use of Body Worn Cameras (BWCs)[3] in developed countries such as the U.S.A, to monitor how police undertake their duties effectively (Schneider,2017; Crow et al., 2017). It unveils that BWCs improved police conduct and increased the trust that people have on the police force due to improved transparency in conducting their day to day duties. Likewise, in some public places such as hospitals and in judicial offices CCTV cameras help to monitor the manner into which government officials undertake their day to day duties.

Although global corruption reports such as Global Corruption Barometer[4]purport that individuals in both developed and developing countries have been paying attention to corruption, the percentages of most African countries is alarming ranging from the lowest country Rwanda having 13 percent to the extreme 84 percent in Sierra Leone (https://en.wikipedia.org/wiki/Global_Corruption_Barometer, visited on 7/9/2017). Narrating further the extent of corruption and its impacts in the

[3]Body Worn Cameras (BWCs) are small devices worn directly on the uniform of front line officers like police officers, usually on the upper chest. These devices record audio and video and can also sometimes be worn on officer glasses or clipped to the brim of a hat.

[4] The Global Corruption Barometer published by Transparency International is the largest survey in the world tracking public opinion on corruption.[1] It surveys 114,000 people in 107 countries on their view of corruption.

continent the Transparency International Report in Sub-Saharan Country 2015-2017 states: "…nearly 75 million people in Sub-Saharan Africa are estimated to have engaged in corruption practices in the past year – some for the intention of escaping punishment by the police or courts, but many are forced to pay in order to get access to basic services that they desperately need" (Transparency International, 2017)The negative impacts of corruption to the development of the people, especially in Africa, are enormous. Corruption increases inequality between rich and poor people. A good example is on how some politicians in some countries benefit through their positions at the expense of their citizens who they claim to serve. José Ugaz, Chair of Transparency International cements this point by stating that "Corruption creates and increases poverty and exclusion''. While corrupt individuals with political power enjoy a lavish life, millions of Africans are deprived of their basic needs like food, health, education, housing, access to clean water and sanitation." (ibid, 2017). Even among middle and low level government practitioners corruption is the order of the day among many African countries, south of Sahara in particular. Thanks to established Electronic Health Records (EHRs) system[5]that has largely reduced rampant corruption cases in Nigerian hospitals (Oyegoke, 2013). EHRs system enabled health officers in various departments to manage data entered in one source with regards to patients' information to be shared by all responsible stakeholders. It helped to avoid patients' long queues and facilitate doctors' quickness in attending extra number of patients compared to the conventional method of using papers that attracted corruption practices which were initiated by unethical health officers.

As highlighted from the outset, Tanzania being one of the developing countries in Africa, is not immune to the problem of corruption across private and public sectors. Several local and international studies revealed prevalent cases of corruption in Tanzania across all sectors of the economy (ICS, 2016; LHRC, 2016;World Bank Group, 2015). The country's position is 116 least corrupt nations out of 175 countries (Trading Economics, 2017). Notwithstanding the presence of several factors which facilitate such occurrence of irregularities and poor provision of social services in Tanzania and other developing countries, lack of and failure to adapt and use electronic facilities that assist e-payment systems was found to be the major causes (Lawrence &Lawrence, 2010). Despite some failures there have been rays of hopes in some areas in Africa. Best practices regarding effective electronic record management use through e-payment system are found in Tanzania and Rwanda in the judiciary sector at higher level courts where investment in the modern ICT infrastructures has

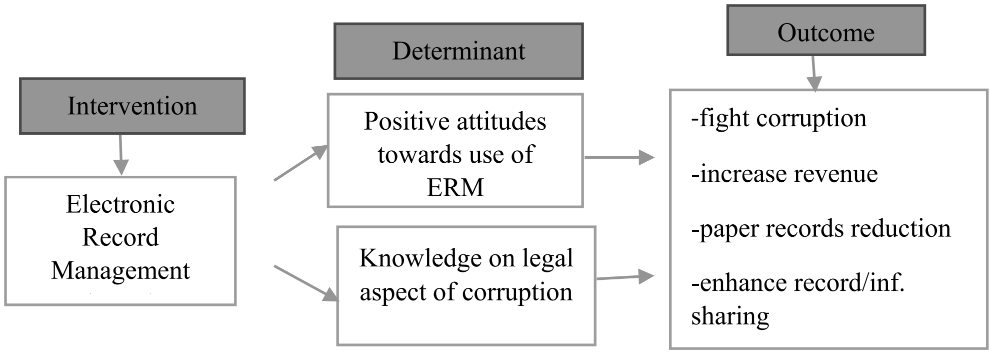
[5] EHRs is an official health record system for an individual that is shared among multiple facilities and agencies. Usually installed to improve efficiency and quality of care and hence reduce cost of keeping and accessing records.

improved efficiency in court proceedings (Vilquin & Bosio, 2013). Nevertheless, little has been achieved on the electronic filing in of various forms of cases (like civil, criminal, commercial and family) to improve timely management of important record. The use of electronic forms facilitates effective administrative processes at the lower levels. The best practices remain in the developed countries. In the developed countries access to and use of ICT facilities improved effective social services delivery due to improved record keeping and management of customers' information and hence, contributing towards reducing corruption cases. So far, little is known about the contribution of electronic record management in fighting corruption in public sectors in the Tanzania economy. Therefore, using the police force, judiciary and hospitals as the selected focus areas, this study sought to examine how the adoption and effective use of various ICT facilities has contributed to fighting corruption and facilitate effective social services delivery and hence, improve socio-economic development of the country in various dimensions.

Theoretical Framework

Theoretical framework is the foundation on which the entire research is based. A good theoretical framework identifies and labels the important variables in the situation that are relevant to the problem defined (Sekaran, 2005). According to Ennis (1999) theoretical framework can help to reveal patterns or relationships that assist in anticipating events or perceptions; and opening up avenues for change or improvement. The term theoretical framework is used interchangeably by various scholars in research to either refer to one of the following; metatheory, theory, or model (Fisher& McKechnie, 2005). Therefore, this paper is underpinned by Electronic Record Management (ERM) change models in place of the theory, since a model is a type of proto-theory, a tentative proposed set of a relationship which can then be tested for validity.

Figure 1: ERM Change Model (adopted from Change Model in Program Theory by Chen, 2005)



Electronic Record Management Change (ERM) Model adopted from Change Model in Program Theory by Chen 2005. This model has three components that are intervention, determinants and outcome. According to Chen (2005), intervention refers to activities or efforts introduced in order to change determinants while determinants are the courses of the problem and outcome indicates the concreate, measurable aspect of the programme goals. Therefore, when the intervention changes the determinants, outcome occurs. Causal relationship here refers to the assumptions that changing in one component creates changes.

In the context of this study it is assumed that the introduction and adaptation of electronic record management in the police force, judicial and health sectors are critical to enable address corruption practices done by officials in the respective sectors hence, effective social services delivery and socio-economic development of the country. These are sectors which tend to have massive flow of individuals looking for services on day to day basis. Given the level of economic development of the country, manifestations of the challenges faced by these sectors are of two folds. Firstly, the government capacity to recruit sizable number of employees to cater for effective public services may be limited. Secondly, among many developing countries, majority of people live below poverty line. For that reason chances that more people engaged in social evils who will be involved in the police and judicial as well as more people seeking health services due to that there is an increasing chance of health problems. Hence, such double burden on the part of the government to provide services to relatively large number of people needs serious investment in electronic record management systems. This may reduce chances of spread of corruption practices initiated by either public servants working in respective sector taking advantage of the crisis or individual seeking services to manipulate regulations and procedures to get the limited services.

Therefore, the interventions such as investing on ICT facilities in these three sensitive sectors that provide social services to the majority of citizens is based on the need of officials to manage their activities and perform their duties both effectively and efficiently. This can simplify the keeping of records and retrieving customers' detailed information and track and monitor how officials perform their duties. However, for this to happen it requires trainings to the officials on the use of the facilities and instill in them positive attitudes towards its use and the benefits it provides. This may increase efficiency in terms of facilitating their work and improving services to their customers. On the other hand, understanding legal aspects of engaging in corruption is crucial to ensure that service providers (officials) and customers to avoid temptation to engage in unethical behaviour. As a result, it is expected that there will be good achievement in terms of addressing corruption practices, increasing government revenues through e-payment, improved performance through effective and timely information. All these will facilitate effective and efficient delivery of services and hence facilitate development of the country.

Methodology

This research work employed qualitative approach. The main focus of the approach is to learn what the problem means from respondents' views points rather than the meaning that the researcher brings to the research (Creswell, 2012). It is concerned with the way people understand things and give meaning based on the premise that knowledge is socially constructed. In addition to the above the approach aims to obtain in-depth information of the investigated issue instead of making a generalization. In this regard different views and perceptions of people regarding the state of corruption in the police, judiciary and hospitals in Tanzania, extracted from various credible sources were analysedto get a better understanding on how electronic record management has been useful to fight the corruption problem. Given the focus of our study secondary data provided relevant and main adequate of information for our analysis. Therefore, as it was stated above the study used an extensive literature review from various credible and reliable sources to ensure validity of the research. These include but not limited to: reports and official information from relevant institutions at national and international levels which are related to regular review, examination, and analysis of the state of corruption. Other current and up to date sources were from peer reviewed articles and newspapers. The review consulted reliable sources in Tanzania like Legal and Human Rights Center (LHRC) reports released annually, Transparency International reports about Global Corruption Barometer (People and Corruption Africa Survey), Trade Economics which releases reports regarding corruption ranks of various countries, Tanzania included. Hence, through reliable websites, blogs, peer reviewed articles and newspapers the current information was obtained regarding the investigated problem in Tanzania in all areas of focus—the police force, judiciary and hospitals. Direct quotations of diverse views and perceptions about the state of corruption in Tanzania were used explain the phenomenon under investigation. Explanations included how electronic record management helped to address corruption. On top of that the statements explained on achievements attained and challenges in the establishment or adoption of ICT to support effective electronic management systems hence fighting corruption. Researchers were able to gather relevant and sufficient information readily available from a reasonable number of sources in relatively quick and inexpensive way. Three main categories formed the major parts for analysis of data, namely police, judiciary and hospital. Although the majority of issues found were similar, some variations existed based on the diversity on the nature of the services provided. Different experiences were unveiled from the selected quotations to get a better understanding of the phenomenon under investigation.

Results and Discussion

Police

Basically, the police force involves a group of men and women who operate in one of the repressive apparatuses of the state. They are tasked to maintain law and order and hence, they are equipped with many powers under law to arrest, search, restraint and investigate the commission of crime (Kapinga, 1990). Therefore, given the powers, in the course of performing their duties, there are chances that officers meet different challenges and therefore, engage themselves in unlawful practices. One among the major challenges is a temptation to be involved in corruption practices. According to Hope (2016), the police corruption[6] is one of the major problems facing the security sector all over the world. It is widespread and hence, need to be addressed to ensure effective and efficient delivery of services (Hope, 2016; Williams, 2002). Given the nature of the police activities it is therefore, imperative that the deployment of various electronic systems such as electronic surveillance or electronic payment system is taken into consideration as one of the important mechanisms to monitor their day to day conducts of duties. Our study in Tanzania concurs with the above findings. Among other things, the introduction of electronic payment systems on traffic police offenses was relevant to address corruption problem. The below quotation substantiate:

> *Payment of traffic fines through mobile phones and Max-Malipo[7] instead of previous system will avoid pay the fines on the spot. In deed this will reduce the chances of corruption on*

[6] Police Corruption is any action or omission, a promise of any action or omission or any attempt of action or omission committed by a police officer, or a group of policers charged by police officer's misuse of the official position and motivated in significant part by the achievement of personal/private or organizational gain and advantage (Hope, 2016).

[7] Max-Malipo is Tanzania's electronic payment solutions owned by Maxcom Africa Limited, it provides various electronic payment services closer to the people through a network of agents.

> *the road as there will be no more cash handouts for traffic policemen. In this new system traffic police issue a receipt and motorist will pay via their mobile money account like MPESA or through Max-Malipo. In this situation electronic notification is given to the offender, who must pay the penalty within a week and failure to do so they will have to meet a surcharge.* Daily News, 7.9.2013)

The above extract shows that, through the use of electronic record management system, the police force now is able to monitor all traffic police offences' payments which were previously done manually. In this case e-payment through Max-Malipo, significantly contribute towards reduction of corruption. As such, there has been an increasing trend of revenue collections by the police officers a result of the use of Maxmalipo payment system in the country. Coupled with improved technology, where currently there is interlink of network between police working in the traffic and those at head office. This helps in identifying any traffic offense such as over-speed it is easy to control unprofessional behaviour such as taking bribes. This is so vital given the nature of the police job—high-pressure job with discretionary powers which may tempt police officer to use that advantage for personal gain. The use of various forms of electronic devices to ensure that police conform to the high standard of honesty, integrity, ethical behaviour when they perform their day to day duties is important (Hope, 2017).

In underscoring the extent to which corruption has penetrated even among a section of public servants who are expected to show an exemplary example to address the problem, traders in some parts of Dar es Salaam region in Tanzania, provide a number of shocking evidences. Some police officers encourage corruption practices by forcing poster seller to falsify receipts on their behalf – enabling them to claim fake expenses. Even when selling to a police station. The poster seller narrates:

> *"They say I have to sell them for 30,000 shillings ($ 13.36), but make the receipt out for 45,000 ($ 20.04)so that 15,000 ($ 6.68) goes to the police,"* (Transparency International, 2015).

It is important to note from the above extract that, notwithstanding with the bad intention of both the police officer and the poster seller to collude, had it been the use of use electronic payment machines such as Electronic Fiscal Devices (EFDs) their intention to steal government revenues would never easily materialized. This is because through the use of EFD machine, the government's responsible revenue collectors are able to track all payment and access its due tax from any transaction made. Indeed, identifying the challenge of payment through manual system, most of government institutions and agencies are now in demand of electronic receipts of any transactions made by their employees. In this regard, the use of EFDs by TRA has a direct relationship with the improving services provided in all sectors in the country due to increased government revenue. This therefore, goes back to improve services in the mentioned sectors. The then Tanzania Minister of Finance, the late Hon. Mgimwa narrates:

> *The innovative system ascertained by Information Technology (IT) entrepreneurs has reduced congestion at office payment desks, addresses tax evasion, curbs cheating(corruption) and increases efficiency. Tax payers can now pay taxes and dues promptly at their own convenience"* (Daily News, 7.9.2013)

Understanding the importance of the electronic record management systems the views of the then Mayor-Kinondoni Municipal Yusuf Mwenda collaborate with the above quotation. He says:,

> "*Previously, we were facing difficulties to meet our revenue targets…we are now happy that collections have tremendously gone up"*
> (http://maxcomafrica.com/testimonials, visited on 21.06.2017).

The above extract quoted during the introduction of new e-payment system in the respective municipality aiming at increasing revenue to cater for both recurrent and development expenditure. It can be noted that the use of electronic record management system has not only been supportive in a direct and better performance of police duties by avoiding corruption practices in the police services, it has also enabled government agencies responsible to collect various forms of payments such as bills and taxes that increase the revenues. In turn, this has enables an increased income to cater for more social services. Hence, leading towards improvement of the development of the country by addressing poor investment of ICT in the public sector as well as reduce poverty level of to the majority of the people.

Judiciary

The judiciary is the authority with final decision in dispensation of justice in the United Republic of Tanzania (LHRC, 2016; URT, 1977). Judicial functions are administered by various courts established in accordance with the Tanzania law[8]. It is expected that in order for the judiciary to protect and promote human rights and get rid of corruption practices, judges would be independent from any influence in order to do justice without fear or favour, affection as well as observing their codes of conducts.

[8]*See* Articles 108, 114 and 117 of the Constitution of the United Republic of Tanzania of 1977;provisions of the *Magistrates Court Act*, Cap 11, [R.E. 2002].

Our observation regarding the extent to which judiciary works in the country to provide justice and hence, avoid corruption practices in the course of delivering services in the countryunveils a number of issues. It was found out that despite commendable job undertaken by the government to improve judicial system, there are a lot of setbacks in terms of providing timely services which is likely to breed corruption practices as the following quotation state:

> *"Access to justice in Tanzania has been for a long time affected by delays and backlog, shortage of judicial facilities and workers is one among the reasons*" (LHRC, 2016).

Indeed such delays may lead into corrupt officials to take advantage of seeking bribes for frustrated customers. Coupled with lack of modern ICT facilities to improve judicial activities and monitor how customers are treated while seeking judicial services, clients are likely to be more vulnerable in the hands of corrupt officials.

Notwithstanding the goals of The National Information and Communications Technologies Policy of (2003),such as to increase the size and quality of ICT skilled human resources, that is crucial to increase productivity of its work force and achieve its intention to be a model user of ICT (URT, 2003). A report from a study entitled *ICT Future Direction for the Tanzanian Courts: A Road Map,* which reviewed the situation of ICT in the judiciary, found out that there were several impediments towards realising electronic record management in the sector. The following are some of the issues raised access and use of ICT facilities within Tanzania courts:

> *While the Judiciary estimated that it had over 6,000 staff members across all the courts, there were ICT support of less than 10 people for the whole Judiciary, with five of these supporting the Court of Appeal and the High Courts, two supporting the Labour Court and two supporting the Commercial Court.*(International Records Management Trust, 2011)
>
> *While computers were being introduced gradually into the Judiciary, the numbers were very limited, and in most areas of the Judiciary, typewriters were still being used. Where computers had been introduced, there was little connectivity between or within the courts. Where Local Area Networks had been established, these were more for Internet access rather than for information sharing.* (ibid., 2011)

The above extracts indicate that the challenges caused by facilities and connectivity leave a lot to be desired in ensuring effective electronic record management in the Tanzanian Judicial. Such poor investment in ICT facilities hinder, to a large extent, the provision of and timely access to justice. In turn, it leads to ineffectiveness in court processes such as recording and transcribing, poor tracking and understanding and poor management of files. It cannot be overemphasised here that such lack of appropriate systems of keeping information and easy tracking of records and up-to-date information attracts in cheating and hence, corruption practices.

Certainly, given the poor level of development and poor record management, cheating is a common scenario featured in many other developing countries. In respect to that Asonibare & Akaje (2017) emphasize that addressing ineffective and inefficiency delivery of justice in Nigerian courts and ensure that citizens are served adoption of ICT is crucial. Hence, access and effective use of electronic record management systems enhance quickness, accessibility; accountability and transparency which will in turn increase the chances to fight corruption in the court that is likely to be done by various court stakeholders like judges, litigants, and court staff. It is further argued that the role of judiciary as one of three main government branches needs to be completely independent in delivering its services to the people in an impartial way.

As highlighted above, it can be argued that the investment of ICT facilities in court in terms of computerization has a positive and direct relationship with productivity of judges measured by a number of cases solved per judge (Paciniet al., 2003). This is evidenced in some countries with high computer literacy to both citizens and court stakeholders. A good example is in South Korea where the effectiveuse of ICT has enabled some judges in the country to adjudicate up to 3,000 cases a year by managing up to 400 a month and hears up to 100 plus a month. This is far and above the international average. The case above shows that investing in ICT facilities and providing regular e-record management training to civil servants responsible for record keeping to all sectors of the economy is important as it will expose them to the new ways to improve their performances. Nyasha (2012), in the study which sought to find the attitude of motor industry employees in Zimbabwe towards the use of fiscalised electronic device, found similar results. The study unveiled that employees who are not well trained on ICT and with low educational level fail to use fiscalised electronic devices because they lack the knowledge on how best to use them. In addition, employees who negatively perceived the use of fiscalised electronic devices due to lack of knowledge on their use, and therefore, some resist using them. Hence, the need to invest in ICT facilities and providing training opportunities among civil servants who work in sectors prone corruption practices is imperative.

In spite of the above mentioned challenges facing the judiciary, there have been good rays of hopes regarding the achievements on electronic record management systems at some high levels, though limited to some regions, Dar es Salaam being mainly favoured. This has, to some extent, helped to improve productivity in the justice system in terms of timely access to justice due to reducing time taken to finalise and reducing backlog of cases. The following statement unveils the achievement reached:

> *In the High Court in Dar es Salaam, case lists are now displayed on television monitors in public areas and members of the public can view dates for cases as well as the names of assigned judges. E-Billboard software is being used for this. Digital recording equipment has been introduced into the courts to assist judges when recording evidence. The 'For the Record' system has been installed in the Court of Appeal, High Court, Commercial Court, Land Court and Labour Court.(International Records Management Trust, 2011)*

Undoubtedly, investing in ICT equipments to improve cases proceedings is worth noting. This is definitely significant towards making sure that corruption practices are avoided and dealt with accordingly whenever they emerge. The achievement in electronic record management judiciary sector in higher level courts in Tanzania and Rwanda is said to be one of the best practice in Africa (Vilquin & Bosio, 2013). Therefore, more initiatives need to be undertaken by the government to invest highly in the use of ICT in the judicial towards the improvement of access to justice. This is so critical in delivering of social services to the people and therefore contributes to the socio-economic development of the country.

Hospital

Effective provision of health services to the citizens is one of the main strategies to enable any country to reach high level of both economic growth and human development. In this regard, health sector is one of the major areas that require high investment (panos.org.uk/wp-content/files/2011/01/panos-londonICTs_and_tanzania-policy.pdf, accessed on 6th August, 2017). Recognizing the potential of Information and Communication Technology (ICT) in transforming healthcare delivery is critical to enable information access and supporting healthcare operations, management, and decision making (URT, 2013).Among several strategic objectives in the health sector is the use of electronic record management systems (eHealth Solutions) outlined the responsible ministry in the country are; Firstly, to enable electronic financial management to ensure effective collection, allocation, and use of health financial resources at all levels in accordance with health plan priorities. Secondly, to strengthen an electronic HR system to improve planning and management of health professionals at all levels (URT, 2013). Definitely the contributions of these in preventing and dealing with corruption cannot be overemphasized. APaper on Joint and Aligned Investment in Digital Health Information System presentation by President's office, Regional Administration and Local Government, 2017, emphasized that the Government of Tanzania Hospital Management Information System (GoT-HoMIS) had gone through improvements. Since the system incorporate various core functionalities to serve the purpose, such as to allow patient profile to be available across facilities through the use of centralized database. Furthermore, the said system integrates the government electronic payment gateway to facilitate cashless environment at health facilities. Not only that, but also, the system allow the incorporation with other systems in health sectors such as National Health Insurance Fund (NHIF), electronic Logistics Management Information System (eLMIS) and District Health Information System (DHIS) so as to simplify bills paying processes.

In respect to the above efforts to improve health services provision, Hon. Anthony Mavunde, Member of Parliament and Deputy Minister responsible for Labour, Employment and Youth connected Biometric system and CCTV at Dodoma General Hospital. This was an attempt to address customers' complaints regarding how officials provided services. In the event of launching the use of those systems Hon. Anthony Mavunde said:

> *"These cameras record both audio and videos as a response to citizens' complaintsregarding challenges they face while looking for health services. Now it is easy for the patients to identify officials who do not performing their duties professionally".*(https://michuzi matukio.blogspot.com/2017/07/naibu-waziri-mavunde-azindua-mfumo-wa.html, accessed on 25th July, 2017)

In a different scenario the application of electronic record management systems through e-payment has received a great attention by the citizens and high level officers of the government. The acceptance and recognition of the e-payment systems has enabled significant improvement of revenues collection as opposed to the previous manual systems in most of hospitals and health centres. Such outstanding high rate of an increase of revenue within a short period of time demonstrate that there were chances of corruption practices on the part of officials responsible in revenue collection. The following statement from the Minister of State in the President's Office (Regional Administration and Local Government) Mr. Suleiman Jaffo, verify our claim regarding previous corruption practices:

> *"Mbeya hospital now collects 500 million ($ 222,717.14) per month from 70 million ($31,180.40) while Sékou Touré Hospital in Mwanza now collects 3.5 million per day from between 150,000/= ($ 66.81) to 200,000/=($ 89.08) per day. We have seen tremendous increase in revenue collection since we started implementing the electronic revenue collection system in hospitals.*(Daily News, 14/05/2016 accessed on 9/08/2017from allafrica.com/stories/201605160647.html)

Likewise, when Temeke intended to launch Max-Malipo Tax Collection System, the success was referred from the then Mayor of Kinondoni Municipal Council Mr. Yusufu Mwenda who unveiled similar situation of sudden rise of revenue collection through e-payment system.

> *The new system is anticipated to boost revenue collection from 31billion ($13,808,463.25) to 41 billion($ 18,262,806.23) annually. The system has proved effective in other places like Kinondoni Municipal council where it was put in put to test and enabled sharp increase in annual revenue from 18 billion ($ 8,017,817.37) to 34 billion ($ 15,144,766.14) from 2012/2013 to 2013/2014 financial year.* (Daily News, 30/06/2015,accessed on 5/8/2017 from http://allafrica.com/stories/201506300549.html)

In light of the above evidences on effectiveness of electronic record management systems in terms of the quick increase in revenue collection through ICT solutions is critical to directly and indirectly fight corruption. Ruxwana et al. (2009) in the study that focused on determining factors perceived to influence effective use of ICT applications in rural hospitals in the Eastern Cape Province found out that despite the availability of e-health solutions there were no adequate facilities to cater for the demand. The study recommended the need to put special attention to improve both soft and hardware infrastructures and train staff on the use ICT facilities. Likewise, for effective record management to improve provision of social services free of corruption to the majority of Tanzania population living in both rural and urban areas, and investment and adoption of ICT facilities cannot be overemphasized.

Conclusion

The paper has demonstrated that the role of electronic management systems in facilitating effective and efficiency performance of activities and delivery of social services in both private and public sectors are critical. This is for the reason that ICT helps to create, store, and track important information in digitalized form through the use of computers and application software as opposed to manual systems which is prone to corruption in service delivery process. Several studies proved the connection between ineffective electronic record management and corruption practices. Further, different scholars have shown that good e-record management has a significant impact on fighting corruption. However, despite all these studies there was a dearth of literature regarding the contribution of electronic management system to fight corruption in some public service sectors in Tanzania. Therefore, this paper examined the contribution of electronic management systems to fight corruption in Tanzania in three public service offices, namely: police, judicial and hospital. Mixed findings were unveiled from the analysed documents which formed the basis for our discussion. The major findings were: the government of Tanzania has made significant initiatives to ensure that there is effective use of ICT facilities in all public services. In many ways such initiatives facilitated to address corruption cases. Good practice in terms of establishing and use of ICT facilities was observed in some case proceedings on higher level judicial offices, e-payment systems installed at regional hospitals as traffic polices. Before these systems were introduced a lot of revenues were stolen through corruption practices done by some dishonest public officials.

As such the achievements attained reflect the fruits of the initiatives made in embrace the objective of the National Information and Communications Technologies Policy of (2003). The policy intends to increase the size and quality of ICT skilled human resources that is crucial to increase productivity of its work force and achieve its intention to be a model user of ICT. However, in spite of the best practices observed in some offices and at some levels of the effective establishment and use of ICT and hence reduced corruption practices, the evidence indicates more investments on training staff and installing ICT facilities that promotes effective use of electronic management systems. This is critical to ensure that public offices are prohibited from engaging in corruption practices so as to improve delivering of social services to the citizens. It is recommended here , for this to happen, the government of should take a leading role in putting initiatives to ensure all government and private institutions are adopt and use e-record management system on their daily service delivery processes to promote sustainable socio-economic development within the country.

References

Asonibare, A. S., & Akaje, H. T. (2015). E-Path to Effective Justice Delivery: the Nigerian Courts in Perspective, 1–15

Becker, K., Hauser, C., & Kronthaler, F. (2013). Fostering management education to deter corruption: what do students know about corruption and its legal consequences?.*Crime, law and social change*, *60*(2), 227-240.

Carmichael, S. (1995). *Business ethics: The new bottom line*. London, England: Demos.

Creswell. (2011). Choosing the mixed methods design. Available at: https://us.sagepub.com/sites/default/files/upm-binaries/35066_Chapter3.pdf. Accessed 29 October 2015

Crow, M.S., Snyder, J.A., Crichlow, V.J. S., Mykla, J.O, (2017). Community Perceptions of Police Body-Worn Cameras: The Impact of Views on Fairness, Fear, *Performance and Primary Criminal Justice and Behaviour. 44*(4), 589-610.

Daily News, (2013).Tanzania: Technology Increases Tax Revenue Collection, Accessed on http://allafrica.com/stories/201309090097.html 8th July, 2017.

Daily News, (2015) Tanzania: Temeke Adopts Max-Malipo Tax Collection System
30/06/2015, accessed on 5/8/2017 from http://allafrica.com/stories/201506300549.html)

Ennis, C. D. (1999). A theoretical framework: The central piece of a research plan. Journal of Teaching in Physical Education, Available at: http://libres.uncg.edu/ir/uncg/f/C_Ennis_Theoretical_1999.pdf Accessed 23 August 2013

Fisher, K. E., & McKechnie, L. (2005). Theories of information behavior. Information Today, Inc.. Available at: http://scholar.google.co.za/scholar?q=Theories+of+information+behaviour&btnG=&hl=e n&as_sdt=0%2C5 Accessed 23 August 201

Gordon, K., & Miyake, M. (2001). Business approaches to combating bribery: A study of codes of conduct. *Journal of Business Ethics*, *34*(3), 161-173.

Hope Sr, K. R. (2017). Training to curb police corruption in developing countries: A suggested framework. *International Journal of Police Science & Management*, *19*(1), 3-10.

Hope, K. R. (2016). An analytical perspective on police corruption and police reforms in developing countries. *Police Corruption and Police Reforms in Developing Societies. Boca Raton, FL: CRC Press/Taylor and Francis*, 3-31.

International Records Management Trust. (2011). *accessed on* 13.11. 2017 from https://www.irmt.org/

ISO (International Organization for Standardization) (2001).ISO 15489-1:2001 Information and documentation. Records management.Available at http://www.iso.org/iso/catalogue_detail?csnumber=31908 Accessed 19 October 2017

Kapinga, W. B. (1990). The Police Force and Human Rights on Tanzania. *Third World Legal Stud.*, 37.

Klitgaard, R. (1988). *Controlling corruption*. Univ of California Press.

Lawrence, R. A., &Lawrence, R. M. (2010). *Breastfeeding E-Book: A Guide for the Medical Professional*. Elsevier Health Sciences.

Legal and Human Rights Centre: Human Rights Report 2016 Available at https://www.state.gov/documents/organization/265522.pdf Accessed 19 October 2017

Mlima, W. J. (2013). *The Impact of EFD on vat collection in Tanzania: a case of Morogoro municipal* (Doctoral dissertation, Mzumbe University).

Nyasha, M. et al., (2012). Attitudes of Employees Towards The Use Of Fiscalised Electronic Devices In Calculating Value Added Tax (Vat). A Case Study Of Motor Industry In Zimbabwe, *International Journal of Management Sciences and Business Research*, *2*,(4), 23-30

Oyegoke, L. (2013). Adoption and utilization of ICT in Nigeria hospitals (Government owned).

Pacini, C., Swingen, J. A., & Rogers, H. (2002). The role of the OECD and EU Conventions in combating bribery of foreign public officials. *Journal of Business Ethics*, *37*(4), 385-405.

Rose-Ackerman, S., & Palifka, B. J. (2016). *Corruption and government: Causes, consequences, and reform*. Cambridge university press.

Ruxwana, N. L., Herselman, M. E., & Conradie, D. P. (2010). ICT applications as e-health solutions in rural healthcare in the Eastern Cape Province of South Africa. *Health information management journal*, *39*(1), 17-29.

Samanta, S., & Sanyal, R. (2016). The Effect of the OECD Convention in Reducing Bribery in International Business. *Global Business and Management Research*, *8*(1), 68.

Schneider, C. J. (2017). Body Worn Cameras and police image work: News media coverage of the Rialto Police Department's body worn camera experiment. *Crime, Media, Culture*, 1741659017721591.

Sekaran, U. (2005). Research methods for business: a skill-building approach, 4th ed. New York: John Wiley & Sons.

Shar, A., & Schacter, M. (2004). Combating corruption: look before you leap. *Finance and Development*, *41*(4), 40-43.

Shepherd, E., & Yeo, G. (2003). *Managing records: a handbook of principles and practice*. Facet publishing

Trade Economics, (2017). Tanzania Corruption Rank 1998-2017 Available on: https://tradingeconomics.com/tanzania/corruption-rank.Accessed 3rd September, 2017.

Transparency International: Global Corruption Barometer - People and Corruption Africa Survey 2015.https://www.theguardian.com/global-development/2015/jul/29/tanzania-corruption-aid-poster-sellers ,rampant corruption in Tanzania keeps fruits of the many in hands of the few, accessed on 2nd August, 2017

Ubaldi, B. (2013). Open government data: Towards empirical analysis of open government data initiatives. *OECD Working Papers on Public Governance*, (22), 0_1.

URT, (2013). Tanzania National eHealth Strategy 2012 – 2018, Ministry of health and social welfare, Dar es Salaam.

URT, (2003). *National ICT Policy,* Ministry of Communications and Transport, Dar es Salaam, Tanzania

URT, (1998). *The Constitution of the United Republic of Tanzania of 1977,* Dar es Salaam, Tanzania

Velicogna, M. (2007). Justice Systems and ICT-What Can Be Learned from Europe. *Utrecht L. Rev.*, *3*, 129.

Vilquin, J., & Bosio, E. (2013). Improving court efficiency: the Republic of Korea's e-court experience. *Banco Mundial*.

Williams, H. (2002). December). Core factors of police corruption across the world. In *Forum on Crime and Society* (Vol. 2, No. 1, pp. 85-99).

World Bank Group: Enterprise Surveys (ES) - Tanzania 2013(HRR 2015) Available at https://www.state.gov/j/drl/rls/hrrpt/humanrightsreport/index.htm#wrapperAccessed 17October 2017

World Bank. (1997). World Development Report 1997: The State in a Changing World, New York: Oxford University Press.

Yusuf, M. O., &Afolabi, A. O. (2010). Effects of computer assisted instruction (CAI) on secondary school students' performance in biology. *TOJET: The Turkish Online Journal of Educational Technology*, *9*(1)

THE CONTRIBUTION OF RECORDS MANAGEMENT IN COMBATING CORRUPTION IN GOVERNMENT DEPARTMENTS IN UGANDA: A CASE STUDY OF THE JUDICIARY

David Mukembo
Lecturer
Uganda Institute of Information and Communication Technology

Abstract

The paper presents the contribution of records management in combating corruption in government departments in Uganda with a case study of the judiciary. The objectives of the study were: to establish the extent to which records management supports in combatting corruption in government departments, to examine the status quo of records management systems in the judiciary, to identify the challenges of records management and to find solutions and make recommendations. There was a review of related literature on the study as indicated. The study was conducted through a qualitative research and the respondents who included judicial officers, advocates of the High Court, records officers and court clerks were selected using purposive sampling technique. Data was collected using interview guide, self-administered questionnaires and observation guides. It was analyzed and interpreted. The findings revealed records management as an aspect of management plays a great role in combating corruption in the judiciary.

Introduction

Rapid growth in records and information management is gaining a lot of awareness in public and private organizations including NGO's. Organizations are increasingly acknowledging the fact that efficient control of recorded information leads to effective management which means that information is more easily retrievable, readily identifiable and economically managed. (Makura: 2005).

Records management is a fundamental activity of public administration. Without records, there can be no rule of law and no accountability. Public servants must have the right information to carry out their work, and records represent particular and crucial service of information. They provide reliable, legally verifiable source of evidence of decisions and actions. (IRMT: 2000).

Records management is a very important aspect of governance process. The effectiveness and efficiency of the public service depends upon the availability of and access to information held in records. Badly managed records adversely affect the broad scope of public service reforms and development projects are often difficult to implement and sustain effectively in the absence of well managed records. (IRMT:2000).

Corruption in Uganda is a big threat to the country's economy and service delivery (Baku: 2008). Unfortunately, in Uganda, society has accepted corruption as a way of life. When we talk about corruption, we are looking at bribery, embezzlement, causing financial loss, false accounting, influence peddling, nepotism etc. the most common form of corruption in Uganda is bribery according to the 3rd National Integrity Survey carried out by the Inspectorate of Government in 2008. (Baku: 2008)

The public continue to admire and support those who accumulate wealth through corruption. People do not question the source of such wealth or the loss of public service that results. While the demand for accountability is increasing due to the work of civil society organizations and anti-corruption agencies, there is still a long way to go to bring about a situation where the public actively demand effective delivery and proper accountability. (Directorate of Ethics and Integrity report 2008 – 2013).

Records provide information for planning, decision making and acts as a foundation for government accountability. They are essential for effective and efficient administration but if poorly managed, they become a liability hampering business operations and draining resources. (Sherperd and Yeo 2003). A quick survey on the Internet revealed about 5 million listings on corruption globally with; 400,000 - Nigeria, 370,000 – Kenya, 268,000 – Zambia. (African Capacity Building, 2007) A Google search on 24th May 2012 gave 109 million hits on corruption alone and gave 175 million hits while "corruption and Uganda" gave 18 million hits. (Okello – Obura 2016).

The main causes of corruption in Uganda include: weak accounting systems, lack of effective monitoring and functioning Institutions, lack of human capacity, low remuneration and poverty (Royal Netherlands Embassy, 2003). This constitutes a major challenge for business operations or planning. The police, the Judiciary and procurements are areas where corruption risks are very high. (Uganda Corruption Report, 2016).

For the purpose of presenting this paper and sharing ideas, I have decided to look at the contribution of records management in combating corruption in the judiciary.

Objectives

1. To establish the extent to which records management supports to combat corruption in government departments in Uganda
2. To examine the status quo of records management systems in the judiciary.
3. To identify problems of records management in the judiciary.
4. To find out solutions and make recommendations for further improvement.

The methodology

The study was conducted through a qualitative research. This was preferred because the design used a small population to study in detail the contribution of records management in the fight against corruption in Uganda. The study population included: judicial officers, advocates of the High Court, and records officers. Judicial officers were included because they are the internal users of records and use them to get information to make court decisions. Advocates were included because they also use the records to defend the citizens in the courts of law; and records officers were also included because they are charged with the day to day management of records from the time of creation until their final deposition. The study area was the High Court Headquarters' and this was selected because it has the biggest number of judicial officers, records officers and a gathering center for advocates of the High Court. The biggest volume of records is also found at the headquarters. Purposive sampling was also used to sample the respondents and this was preferred because the system allowed the researcher to select respondents basing on his own judgment to seek information from the respondents. Self-administered questionnaires were used to gather the data and these were used because they allowed the researcher and respondents to have an interaction, and asking questions. He also reviewed a lot of literature related to the study and later presented the findings.

Literature review

The fields of records management has traditionally been viewed with little or any significance. Records management in developing countries is yet to attain the level of attention and support like countries of the developed world. Court records are given much attention in the developed world and in the developing countries, it is the opposite. (Setareki 2005). Records are not provided at the right time and cases of missing files are rampant. Decisions are not made at the right time and cases are adjourned due to lack of information (Alividza 2004). Cases of documents missing from files or complete files disappearing are very common in the Judiciary and retrieval of files and documents is a problem. Cases are duplicated and sometimes documents are filed on files where they become redundant and cannot be shared with others (Alividza 2009). Loss of control of court records results in delays in processing cases; provides scope for corruption and undermines the rule of law (IRMI 2008). Cases of missing files have been reported in the press and has contributed to delays in the administration of justice. Citizens have lost confidence in the judicial system and sometimes resort to mob-justice.

In the New Vision of (22nd July 2009), Moro reports “Loss of files irks Judge.” The issue of missing case files and documents is a matter of great concern and if not stopped, may lead to dismissal of some judicial staff. “Recently, a file which I had first handled got lost from my desk. I later learnt that it was picked by Clerk.” Some of these court clerks are compromised or bribed with about UGX.50,000 to hide files. The Judiciary is one of the institutions with pillars of integrity in the fight against corruption and called for a solution to promote Integrity and accountability (Musene 2009). He cites poor remuneration as the major motivating factor of corruption. For records to be valuable in combating corruption, they must be accurate, complete, timely, relevant and credible. (Mnjama, 2005). Efficient records management is the greatest enemy to corruption and any government that wishes to be accountable to its citizens must demand for efficient record keeping in public offices (Mnjama 2005). Nsambu (in the New Vision of 24th April 2008) reports” corruption has not only invaded Judicial seats but has also found a fertile ground in court registries. Without a tip, a file may get lost and will never make its way to a hearing.”

Mukisa (in the New Vision of 17th July 2009) reports “a grade two magistrate was accused of corruption and was charged with four counts of soliciting a gratification and abuse of office by receiving a bribe”. Chibita wa Duallo (in the New Vision of 18th April 2002) reports “every once in a while, work will be on a standstill because a file is lost, stolen, or disappeared and the disappearance is more in the courts of law.”

Information is one of the major indices that judge the development of any judicial institution. Where information is not provided to the right officer at the right time, decision making becomes a problem. Court registries is one of the areas where such information is found to support in the decision making process. To speed up the retrieval of court records, court case records information systems have been established as a way of improving the effectiveness and efficiency in storing and retrieving court records. For example, in North Dakota, Walle (2005) states ‘a court records management system was established and serves as a basis for storing all district case documents electronically to increase efficiency and effectiveness in the processing and sharing of case related documents’. However, much as the developed world has initiated such programs; access to court records in the developing world Uganda inclusive is a bit different although they have started giving it some attention.

Sekareki (2005) observes that the field of records management has traditionally been viewed with little if any significance. He adds that records management in developing countries is yet to attain the level of attention and support in countries of the developed world. He notes that though court registries are given much attention in the developed world, in developing countries it is the opposite. Records are not provided at the right time and cases of missing court files are rampant. Decisions are not made at the right time and sometimes cases are adjourned due to lack of information. Alividza (2009:84) reports that cases of documents missing from files or complete files disappearing totally are common in the judiciary and retrieval of files and documents is a problem. Case files are duplicated and documents are filed on files where they become redundant and cannot be shared with other users. She asserts that the quality of justice is improved through the protection of evidence, proper archiving and retrieval of files. International Records Management Trust (2008) observes that loss of control of court records results in delays in processing cases, provides scope for corruption and undermines the rule of law.

Decisions are made without full details of the cases; and judicial officers and the public are unable to obtain information about cases and their progress. Case management systems cannot make their potential contribution to improving the efficiency of the courts and the delivery of justice unless the records are complete and reliable.

In the case of Godfrey Kisasa versus David Nkata Kanyerezi T/a D.K. Educational Hill Schools Ltd, Civil Suit No.278/2008, a case before the Grade I Magistrate at Mwanga II Court; the Plaintiff's Counsel filed an affidavit of Service of Court Summons. However, when the magistrate was perusing files, he found no copy of the affidavit of service and the case was dismissed. The Magistrate acted properly; within the law. The advocate whom the plaintiff subsequently engaged applied for reinstatement of the suit in the course of her work, she found that the advocate whom the plaintiff engaged in the first place had dully filed an affidavit of summons as is required under order 0.5 of the Civil Procedure rules. He had copies of the affidavit of service, bearing the court stamp and obviously indicating that court had received the affidavit of service. So how did the court file copy go missing?

Alividza (2009:83), (in the Journal of Uganda Judicial Officers' association,') advises all players in the justice system to access the right information about judicial functions in order to make correct decisions. Without the right information at the right time in the right place and right format, the users' reaction to the justice system will be prejudiced. Cases of missing files are always reported in the press and this has contributed to corruption and delay in the administration of justice. Citizens have lost confidence in the judicial system and sometimes resulting into mob justice.

Findings

Current State of records

a) Registries have limited storage facilities and space making records storage and retrieval difficult.
b) File retrieval is sometimes difficult and thus delaying the hearings.
c) The staffs have limited skills in managing judicial records.
d) Sometimes staff are not willing to look for case files unless a tip (kintu-kidogo) is provided.
e) Sometimes files are hidden or mutilated to destroy evidence.

Role of records management in the fight against corruption

The first objective of the study was to establish the extent to which records management supports in the fight against corruption in the judiciary in Uganda. Under this objective, the writer looked at the following indicators: case delays, current records management systems, backlog of cases, limited access to justice, and limited confidence in the judicial system. Specifically he looked at how access to timely, complete, accurate, reliable and authentic records contributes in the fight against corruption in public offices Uganda. The above indicators were used to examine whether effective and efficient records management system plays a big role to combat corruption in the public service.
The findings revealed that the rate at which effective records management contribute to combat corruption the judiciary in Uganda is very high. Most respondents agreed (i.e. judicial officers 8(100%) and 34(97%) advocates.) that in order make fair and timely court decisions, records need to be accessed in time and when they are complete and reliable. The findings also revealed that when records are not provided at the right time, cases are delayed contributing to inefficiency in the administration of justice. The study also revealed that badly managed records lead to backlog of cases, limited access to justice and limited confidence in the judicial system by the public.

How corruption affects administration of Justice in Uganda

The study aimed at establishing the degree at which the above indicators affect administration of justice in Uganda. The purpose was to find out the role efficient records management system in the fight against corruption in public offices and administration of justice in general.

Case delays

According to the findings, case delays results into many prisoners to be forgotten in prisons making the general public to lose confidence in the judicial system. The responses further revealed that cases fail to take off without files from which records and proceedings are obtained. It also contributes to corruption and backlog of cases. The responses also revealed that records are not provided at the right time required for court proceedings and making courts not to take off. While reviewing documents of the judiciary, Alividza (in the journal of Uganda Judicial Officers Association volume 15 April 2009) observed that cases of documents missing from the file or files disappearing completely are very common in registries and retrieval of files and documents is a problem that contributes to case delays.

Back log of cases

The findings also revealed that back log of cases is caused by lack of enough judicial officers and inadequate access to timely, complete, relevant and reliable records. The responses further revealed that records officers, court clerks and some judicial officers in lower courts frustrate the entire judicial process by misplacing, altering and mutilating case files. It also causes a low quality and depth of analysis in decisions delivered by courts due lack of access to timely and reliable records

Limited access to justice

The responses also revealed that limited access to justice is also contributed by lack of access to timely, complete, reliable and accurate records. According to the Value for Money Audit report on disposal of cases in the High Court, delays in disposing of cases in the judiciary is attributed to poor filing systems, frequent adjournments, limited application of alternative dispute resolution mechanism, inadequate staff and poor monitoring. The general public has lost confidence in the judicial system and has resorted to mob justice as a way of exposing their dissatisfaction.

Limited public confidence in the judicial system

The findings also revealed that the above is also contributed by inadequate access to complete, accurate and reliable records. Courts fail to sit because records that are produced are either incomplete or unreliable. While reviewing minutes of a meeting that was held on 27^{th}January/2011, between judges, advocates and the Justice Law and Order Sector institutions (JLOS), the chief justice informed members that the Uganda judicial and legal system has suffered a crisis of confidence because of corruption and unethical conduct of all officers of the court including those outside the parameter and appealed to members to desist from such to promote the integrity of the judiciary.

Time taken to access accurate, complete and reliable records

The paper aimed at establishing the degree to which respondents have access to complete, accurate and reliable records. Specifically, the writer aimed at finding out the time taken to access case files by judicial officers and advocates respectively. The responses revealed that the time taken for judicial officers to have access to case files ranges between 20 – 40 minutes for judicial officers and 60-80 minutes for advocates. Sometimes they fail to access case files. During the observation process, the writer observed that most of the files are piled on top of the cabinets and others stored on the flow making retrieval difficult. When a Judge requests for a case file, it takes the registry between 20 – 40 minutes to retrieve and forward the file to the judge. However, the researcher also noted that the procedures for advocates to case files does not favour them and those who have access do it after bribing a records officer or court clerk to look for the file either in the registry or records centre and this benefits advocates who have influence with the registry personnel. The researcher also observed that sometimes files are misplaced in the registry by records staff having interest in particular case files after collaborating with some advocates on the same matter. They either hide or misplace a file limiting other parties from having the case file.

The Effects of inefficient records management system on combating corruption and administration of Justice in Uganda

The study also aimed at finding the degree at which inadequate access to timely, complete, accurate and reliable records affect in the fight against corruption and the administration of justice in Uganda and it targeted judicial officers and advocates; and the following responses were given.

Judicial officers	**Advocates**
• 8(100%) revealed that cases are not heard on time leading to case delay and backlog • 6(75%) revealed that prisoners are sometimes forgotten in prisons. • 8(100%) revealed that the situation leads to corruption • The date of hearing the case may not be fixed • Cases' may not be heard • Cases' are dismissed due to	• 30(86%) revealed that the situation leads to adjournment of cases. • 20(57%) revealed that clients lose interest in their cases • 20(57%) revealed that the situation leads to limited public confidence in the judicial system • The situation affects the speed at which cases are handled.

Judicial officers	Advocates
lack of prosecution especially if the case file is traced later and the information is not brought to the attention of the litigant or his advocate.	• Sometimes evidence is lost, increases operational costs and tarnishes the advocate-client relationship.

Source: field survey

Remedies to the problem of corruption in the Judiciary

Court Case Administration System (CCAS)

The judiciary is implementing a web based case management system called Court Case Administration System (CCAS). It is in the Court of Appeal and other High Court circuits divisions and some magisterial courts. It is an integrated system designed to automate the case management work flow. It has been implemented in 50% of the High Court circuits namely: Jinja, Masaka, Lira, Arua, Gulu, Soroti and all the High Court divisions (Civil, Criminal, Family, Commercial, Land, Anti–Corruption and War crimes). Others divisions implementing the CCAS include the Chief magistrates' courts and the planning registry since they are linked to the Kampala Data centre via the internet. Other courts uses stand a lone computer to record transactions in CCAS and send copies of data manually to the Kampala Data Centre. The CCAS program has improved the movement of files. Alividza (2009:90) states that the introduction of the Court Case Administration System (CCAS) has decreased the loss of case files; improved on the retrieval of files and general improvement of the movement of files. Management is able to monitor the performance of its employees and allocate resources accordingly. she concludes that the introduction of a CCAS system as a computerized record keeping system maintains all relevant data and makes it available to all users to share information and protects the unauthorized access. The software registers claims, locates the movement of files, trace case files being handled by judicial officers. It also has provisions for case allocation and hearing date and informs a user on the status of case whether it is on-going or completed.

Benefits of the CCAS

a) Tracking records is easy and is cost effective in terms of stationery.
b) The system is networked and information sharing is easy.
c) Helps records office to identify whether a file was registered or any updates made.
d) Saves space and reduces on the misplacement of files and data.
e) Enable records officers to trace the person handling a case.
f) Allocates case numbers/ references automatically.

Conclusion

Records management is the process of controlling records from the time of creation until their final deposition. For records to be in position to combat corruption, they must be accurate, reliable and authentic. Efficient records management is the greatest enemy for corruption and loss of control of Judicial records creates opportunities of fraud, leads to loss of revenue, loss and misplacement of case files and provides a fertile ground for corruption. The rule of law is undermined since the files that provide information cannot be availed on time. In order for records management to support in the fight against corruption records should be accurate, complete, reliable and authentic.

References

Baku, Raphael "Fighting corruption is the responsibility of every Ugandan." The Inspector " a new letter of the Inspectorate of Government."

Alividza, Elizabeth Jane (2009) Using ICT to drive the Judiciary is strategic mission. The journal of Uganda Judicial Officers association volume 15.

Chibita wa Duallo (2002) "How do files vanish" the New Vision 18th April 2002.

International Records Management Trust (2000) Managing records as the basis for effective service delivery and public accountability in development.

Mnjama N. M (2003) Combating corruption through effective records management practices in Kenya.

Musoke, Abubaker (2002) Don pins Court Clerks: The New Vision of 30th December 2002.

Muwonge, Emmanuel (2008) Court clerk remanded over bribe. The Red Pepper 26th August 2008.

Nsambu, Hillary (2008) "Courts top in bribery" The New Vision 25th April 2008.

Okello – Obura Constant (2016) "Effective Records and Information Management as s catalyst for fighting corruption."

Sheperd & Yeo (2003) "Managing records a handbook of principles and practices:- London: Facet Publishing.

Uganda Republic of "Directorate of Ethics and Integrity" National strategy to fight corruption and Rebuild ethics and Integrity in Uganda 2008 – 2013.

THE NEED FOR RECORDS MANAGERS ADHERENCE TO ETHICAL PRACTICES

Julius Tunsaje Tweve
Senior Lecturer
Tumaini University Dar es Salaam

Abstract

The aim of the study was to investigate the need for records managers to adhere to ethical practices in records management sector. The study was guided by three objectives which covered issues of importance of adherence, factors behind failure to adherence and impacts of failure to adhere to ethical practices. The study was conducted in Tanzania's government ministries. The study involved three main groups of respondents namely human resource officers, records managers and registry users (information users). Data collection was done through questionnaire for information users (registry users) and records managers and interview guide was used to collect data from human resources officers. The main findings of the study first, records managers have a role to play in reduction of corruption practices in different government offices. The findings show that all records managers pointed out that adherence to ethical practices at the ministries raises the prospect of reducing corruption practices. Second respondents comment that lack of a code of conduct for records managers influence fomented unethical workplace practices among their ranks. It was observed that other professionals such as teachers, lawyers and doctors had their own code of conduct over and above the general code of conduct for public services. Third the findings suggest that through non adherence to ethical practices in records management the government can face a lot of impact such as increasing corruption and poor decision making. The study recommends that establishment of code of conduct or ethics special for records managers is required.

Key words: *Adherence of records managers in ethical practices*

Introduction and Background

Records management has grown over the years as a discipline in library and information science. The evolvement of field has also been embraced by many other disciplines. Despite the field of records management having a relatively short history, it has been progressive and has been recognised in the United States for nearly 20 years (Froehlich, 2004). Capurro (2006) asserts that ethics in the information sector focuses on confidentiality, information bias, and quality control. Hauptman (1998) focuses on ethical challenges in librarianship such as censorship, privacy, access to information, balance in collection development, copyright, fair use, code of conduct and the problem of patrons. Ethical conduct and practice is a prerequisite to being called a professional. Sabina *et el*. (2005), on their part, observe that records managers ought to be persons worthy of public trust, experts who mediate between readers and information and/or registry users.

In fact, records managers as information professionals play a critical role in fighting corruption, protecting the rights of citizens, and ensuring that transparency, accountability and good governance prevail. However, African governments generally face major challenges when it comes to records management. Ndenje (2010) observed that the management of public sector records is critical because records help to enhance efficiency and effectiveness in the public service; and yet, records management practices in Tanzania's government ministries are not well-managed, let alone given the priority they deserve. Cases of record-keeping violations have been reported in the mass media, often under circumstances involving improper political pressure and corruption (Tweve, 2008). These cases result from ethical lapses of one kind or another or which pose ethical problems for records managers. Chachage (2006) pointed out that the challenges records managers face in Tanzania are associated with lack of specific budgets, trained personnel and appropriate records management policies.

Chachage (2006), Tweve (2008) and Ndenje (2010) observe that records management in Tanzania is an established profession and yet little efforts have been made to improve its services in the public sector. The authors also underscore the fact that records managers in Tanzania require not only knowledge and skills but also ethics to perform their duties effectively. Even in other developing countries such as Zimbabwe, lack of professionalism and ethical practices in records management remains a problem that is not well-recognised (Ngulube, 2000). On the whole, records management in Tanzania has received little attention, particularly in scholarly discourse. Indeed, not much has been published so far on how information professionals, particularly records managers, comply with ethical requirements. In fact, ethics and a code for information professionals in Tanzania have yet to be established as for other professionals in the country. Loss of files by misplacement or gross negligence and destruction of documents because of irresponsibility and lack of accountability remain a common practice, which persists in courts of law and different public offices (Tweve, 2008). Said (2013) in *Mwananchi* reported that the Ministry of Lands, Housing and Human Settlements Development had terminated the services of two Lands officials in Morogoro for taking files out of the Registry without complying with laid-down procedures and regulations. There are many similar cases, which have been reported in the mass media. However, researchers have yet to take keen interest in this area of ethics in records management and its implications for the management of public records.

Statement of the Problem

The majority of scholars comment that a good record management system needs to have certain characteristics (Lipchak, 2002, p.3). These characteristics include determining information needs, creating and acquiring information, distributing and sharing records and information, evaluating and using information to solve problems and documenting activities and actions. Other characteristics are determining responsibility for managing and protecting records, identifying, organising, storing and disposing records, providing sufficient staff, training and other resources and evaluating the performance of the records system (Kemoni, 2007, p.18). Generally, the issue of ethical practices has not been considered as one of important elements in records management. For example, an organisation can have sufficient staff but who are not working ethically.

On the whole, unethical professional conduct in the records management sector or simply non-adherence to records management remains a source of grave concern in Tanzania's public sector. Some of the problems resulting from such practices include lack of democracy, increased corruption, lack of integrity, respect and trust (Kemoni, 2007). Therefore, there was a need to investigate the state and attendant problems associated with (un)ethical practices of records managers in Tanzania's government ministries.

Objectives

The study was guided with three specific objectives; the first objective aimed at determining the importance of records managers to adhere to ethical practices. Second objective covered factors behind failure to adhere to ethical practices. Third objective identified the impact of records managers failure to adhere to ethical practices.

Review of related Literature

During the 1990s, in many countries, particularly in developing countries in Africa, offices and corridors were piled high with closed files and filing cabinets were crammed with files that had ceased to be active (Kemoni, 2007; Thurston & Cain 1995). Classification systems were breaking down and unsatisfactory systems existed for managing the creation, use and storage of these records. This dire situation had adverse consequences not only for officers who depended on the files to define and implement policy but also for the Records Managers in their bid to work ethically and professionally. Thurston and Cain's (1995) findings regarding the poor state of record-keeping in many developing countries are consistent with the observations made by the (IRMT, 1999, 2002) and Mnjama, 2004).

Kemoni (2007) points out that in many countries, particularly in developing countries, the public sector record-keeping systems were not just weak, but also had collapsed and did not function at all (IRMT, 1999c). This total collapse had been particularly evident in countries that had once been part of the European-dominated colonial regimes. The International Records Management Trust [IRMT] (1999c) observes that, following independence in these countries, this situation deteriorated progressively, as part of a general decline in public administration. People employed in the registries had limited training or experience with records management work. As a result, file classification and indexing systems originally designed to meet the records management requirements of the colonial period became unwieldy and ultimately unmanageable. Over the last several decades, there had been a significant deterioration in the management of official records in developing countries, which compromised issues of efficiency, effectiveness, accountability, the protection of human rights, provision of service to citizens, poverty reduction strategies and the rule of law (IRMT 2005). Inevitably, ethical malpractices in this field were a nagging problem that demanded urgent measures.

Poor management of records as a resource was evident in many African and Central American countries (Mnjama, 2004). Based on some of the records management projects this author participated in and which were funded by the IRMT and the WB, among other donors, in Kenya and Botswana and from visits to Tanzania, Ghana, the Gambia, Sierra Leone, Guyana and Belize, Mnjama (2004) concluded that the management of records was plagued by many problems. These problems included poor layout of, and untidiness in, the records storage area, regular loss of files and information, lack of file indexes and registers and lack of control of file movements. Other problems were lack of retention and disposal schedules, poor supervision of records staff and lack of knowledge of the importance of information. But the issue of ethical practices in records management as one of problems facing records managers was not considered.

Examining the practice of records management in the public sector in Zimbabwe and the extent to which records management in Zimbabwe could be regarded as a profession, Ngulube (2000) in Kemoni (2007) found that records were mishandled and abused, suggesting a lack of ethics. Records managers did not have training in records management and lacked a code of conduct. The findings prompted Ngulube (2000) to conclude that records management had yet to be professionalised in Zimbabwe. Thus, the author called for the development and adoption of a records management code of ethics. A decade later since the call the situation in Zimbabwe had not changed much. In Tanzania, things are not much better: records managers face the same dilemma.

Kemoni (2007) and Ombati (1999) note that the state of records management in Kenya was generally poor. In this regard, Mnjama (2003) decries the inadequate state of record-keeping in Kenya, stating that the factors contributing to the current state of recordkeeping included failure by senior management to establish acceptable records management goals and practices, as well as the non-implementation of various recommendations dealing with improvement of records management in Kenya's public sector including compliance or adherence to ethical practices. The inadequate state of record-keeping in Kenya and its impact on public service delivery might be similar to the situation obtaining in Tanzania. This situation creates a need for conducting an in-depth investigation on the issues by academicians, administrators and researchers.

Professional Ethics for Records Managers

A professional ethics for a particular field addresses the moral responsibilities of a member of a profession for field practice (Quinn, 2011). These responsibilities are based in part on the particular role the professional plays; they are also based on the defining aspects of a given professionalism: knowledge, trust, authority, and autonomy. These professional ethics provide guidance on ethical issues confronting a given profession. For records management, the climate of ethical crisis presents challenges and opportunities (Cox, 2006). It presents challenges because the types of unethical acts perpetrated by organisations usually implicate information and records in some way.

Thus, Records Managers (*ibid*.) often get implicated in improper destruction, disclosure, alteration or withholding of records. Also, Records Managers face the risk that they might be caught up in the wrong doing if they do not have a clear understanding of how to manage information and records ethically. In the face of these challenges and opportunities, the time is right for the records profession to develop a distinctive ethics to deal with the emerging problems in information management. In fact, records management as profession should have professional ethics, particularly a code of conduct. Professional ethics for records managers will share many issues with other areas of business and professional ethics, but will place the perspectives of records at its centre.

Why is it important for records managers to have their own professional ethics? Davis (1996) responds to the question by indicating that, there are number of reasons justifying the development of a professional ethics for records managers. To begin with, records professionals play a distinctive role in advancing the ethical management of organisations by providing authentic records of its activity. Second, having a professional ethics is one of the standards of competence and building a community. On the other hand, records professionals need to manage the ethical challenges they face in their roles; they need to know how not to violate someone's right to privacy or someone else's right to information. They also need to know when they have a conflict of interest and be ethically competent.

Research Methodology

This study investigated the importance of adherence to ethical practices among Records Managers in Tanzania's government ministries. Specifically, the study was concerned with investigating importance of adherence to ethical practices, factors behind failure to adherence and impacts of failure to adhere to ethical practices. The study was conducted in Tanzania's government ministries. The study involved three main groups of respondent namely human resource officers, records managers and registry users (information users). Data collection was done through questionnaire for 250 information users (registry users) and 15 records managers and interview guide was used to collect data from 4 human resources officers. Four ministries were selected purposely to represent other ministries.

The study employed a mixed methods research design as it made use of both the quantitative and qualitative approaches to research in a complementary fashion. The use of mixed research approaches helped to bring together the strengths of both approaches to corroborate and validate the data collected. The deployment of the combined research methods approach allows for multi-methods, convergence approach, triangulation, complementary purpose, and it can help to neutralise or cancel out biases inherent in the use a single research method as proposed by (Creswell, 2003).

Findings

Importance of Records Managers' adherence to ethical practices

Generally, employee adhering to ethical practices contributes to enhanced integrity and reputation of the particular institution. In this regard, the respondents were asked to rank the importance of Records Managers' adherence to ethical practices in their information services provision. Apart from the listed items in the questionnaire on the importance of records managers' adherence to ethical practices, the respondents were also requested to add other important aspects. The findings of this aspect of the importance of records managers' adherence to ethical practices are presented in the subsequent sub sections.

Records Managers' views on importance of ethical adherence

Records Managers were asked to identify the importance of ethical adherence in their information services delivery. The itemised variables on the importance of adherence to ethical practice produced the following results. Table 1 presents the summary of the findings.

Table 1: Importance of Records Managers' adherence to ethical practices

Importance of ethical practices	Not sure		Moderate		High		Very high	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Promote trust in Records Managers	0	0.0	0	0.0	5	33.3	10	66.7
Increase number of users	0	0.0	0	0.0	4	26.7	11	73.3
Increase user satisfactions	0	0.0	0	0.0	8	53.3	10	66.7
Attainment of ministry objectives	0	0.0	0	0.0	5	33.3	10	66.7
Keep/maintain standards of services	0	0.0	0	0.0	4	26.7	11	73.3
Build an information society	0	0.0	0	0.0	3	20.0	12	80.0
Reduce corruption practices	0	0.0	0	0.0	0	0.0	15	100.0
Promote ethical decision making	0	0.0	0	0.0	5	33.3	10	66.7
Control bribe	0	0.0	0	0.0	3	20.0	12	80.0
Maintain integrity of the ministry	0	0.0	0	0.0	2	13.3	13	86.7
Control misunderstanding among employees	0	0.0	0	0.0	5	33.3	10	66.7
Maintain peace at work place	0	0.0	0	0.0	3	20.0	12	80.0

Source: Field Data (2015)

Data in Table 1 illustrates different importance of records managers adherence of ethical practices in their information service delivery at their work places. The data suggest the following observations:-

First, records managers have a role to play in reduction of corruption practices in different government offices. The findings show that all 15 (100%) the records managers pointed out that adherence to ethical practices by Records Managers at the ministries raises the prospect of reducing corruption practices. During data collection, the researcher witnessed many people at the Ministry of Education spending more than two days waiting for their employment files to be found. Indeed, many teachers, particularly those who have retired, were found looking for their records or documentations to help them get their pensions. Such desperate situations have proven over the years to create conditions and loopholes for corruption in many public offices that dishonest Records Managers might exploit.

Second, in different government offices lack customer care services; the data suggest that through proper records keeping might increasing user satisfaction. Generally, when professionals offer their services accordingly, clients or customers get satisfaction. Thus, all professionals are reminded to work ethically, as the data indicates many 10 (66.7%) of the Records Managers rated highly customer satisfaction as a product of ethical practices amongst their ranks. Indeed, information services provision is the same as other professional services given to clients in different ministries. The downside of ineffective information provision is that decision-making can be reached on ad hoc basis in the absence of enough and quality information. It is in this regard that the respondents called for ministries to ensure that records managers are given enough training and other motivational factors to provide relevant, accurate and timely information to the management of different levels and facilitate proper decision-making. Such proper decision-making for different cadres and client resulting from effective records management tends to increase user satisfactions.

Third, findings suggest that through proper records management the nation can build an information society. Findings indicate that many 12 (80%) of the respondents ranked highly importance of building an informed society to ensure Records Managers comply with ethical practice at the ministries. Information ethics insists on the duty of all information professionals (records managers, librarians, archivists and information officers) to make sure the society is informed. Indeed, an informed society increases the prospects of making informed decisions in day-to-day activities. The same is true with Records Managers as they have a potential role of making sure all clients in their ministries are informed.

Registry Users' views on importance of ethical adherence

Information and/or registry users' were asked to point out importance of ethical adherence among Records Managers' in provision information services. The summary of their responses have been summarised and presented in Table 2 below:-

Table 2: Registry users' views on importance of adherence to ethical practices

Importance of ethical practices	Not sure		Moderate		High		Very high	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Promote trust in Records Managers	0	0.0	54	21.6	117	78.4	79	31.6
Increase number of users	0	0.0	46	18.4	54	21.6	133	53.2
Increase user satisfactions	0	0.0	31	12.4	66	26.4	153	61.2
Attainment of ministry objectives	0	0.0	42	16.8	72	28.8	136	54.4
Keep/maintain standards of services	40	16.0	48	19.2	63	25.2	99	39.6
Build an information society	0	0.0	46	18.4	67	26.8	137	54.8
Reduce corruption practices	15	6.0	43	17.2	66	26.4	126	50.4
Promote ethical decision making	0	0.0	47	18.8	96	38.4	136	54.4
Control bribe	26	10.4	55	22.0	79	31.6	90	36.0
Maintain integrity of the ministry	20	8.0	29	11.6	74	29.6	127	50.8
Control misunderstanding among employees	12	4.8	25	10.0	97	38.8	116	46.4
Maintain peace at work place	19	7.6	42	16.8	90	36.0	99	39.6

Source: Field Data (2015)

The data presented in Table 2 presents a clear picture that there are many aspects attached to the importance of Records Managers' adherence to ethical practices in their information services provisions that lead to the following observation:-

To start with, ethical adherence among records managers in government offices contribute to reduction of corruption practices. It is evidently shown by respondents that adherence to ethical practices by Records Managers at the ministries raises the prospect of reducing corruption practices. For example, files get lost or are hard to trace. As a result, Records Managers are given bribes to as an inducement for extra efforts to be made to trace the file or to expedite the availing of the files to the client.

Another observation is that ethical adherence among records managers it adds value to user satisfaction in government offices. Generally, many 153 (61.2%) of the information and/or records users rated highly the importance of increasing user satisfaction through Records Managers' ethical practices in different ministries. Indeed, information services provision is the same as other professional services given to clients in different ministries. The downside of ineffective information provision is that decision-making can be reached on ad hoc basis in the absence of enough and quality information.

Apart from the above, many citizens in different occasions complain about the decreasing of integrity of the government offices in different ministries. About half 127 (50.8%) of the respondents in the current study pointed out that the adherence to ethical practices by Records Managers maintains the integrity of a given ministry. The integrity of any organisation or institutions depends on many factors, with providing services ethically being one of the most crucial.

In the addition to the above, findings suggest that records managers contribute a lot in promoting ethical decision-making among government officials in different ministries. The majority 136(54.4%) of the information and/or registry users said that, by working ethically Records Managers may promote ethical decision-making at the ministry for different levels of the ministry.

All in all, the findings in the Table 2 portray a general picture that records managers are very important to facilitate day today activities. This facilitation can be only achieved if they adhere to ethical practices. This observation call upon all records managers professionals, human resources offices, directors, and other main stakeholders to make sure records are managed properly. To support this, all the Human Resources officers during interview argued that registry is like a reception of an organisation, which makes Records Managers play a key role in serving clients properly to ensure the integrity of the ministry is safeguarded. Time spend by clients to get services is one way of measuring the efficiency of a particular organisation. In this regard, Records Managers are supposed to work hard to comply with ethical practices as one way of maintaining the integrity of their profession and the ministry at large. Also, during the interview, Human Resources officers insisted that, any decision-making process cannot be reached at the ministry if there is no information at hand. Thus, Records Managers have to provide information on time to different managers at the ministry so that they make informed decisions for different activities.

Factors behind Failure to Adhere to Ethical Practices

Another issue which the study investigated was the reasons or factors behind the records managers' failure to adhere to ethical practices. In this regard, the respondents were asked to suggest reasons behind the records managers' failure to adhere to ethical practices. The list of reasons or factors behind such failure was provided in the questionnaire and the respondents were asked to tick their occurrence of the items. Also, they were asked to add other reasons (factors) to those suggested. The subsequent sub sections present views of factors or reasons behind the records managers' failure to adhere to ethical practices.

Records Managers' views on failure to adhere to ethical practices

Records managers were asked to point out factors led them to fail to adhere to ethical practices. The itemised variables on the failure factors and the extent to which record managers fail to adhere to ethical practice produced the following results and Table 3 presents the summary of the findings.

Table 3: Records managers' views on factors behind failure to adhere to ethical practices

	Not sure		Moderate		High		Very high	
Failure factors	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Lack of code of conduct	0	0.0	0	0.0	6	40.0	9	60.0
Individual behaviour	0	0.0	1	6.7	2	13.3	12	80.0
Poor supervision	0	0.0	5	33.3	5	33.3	5	33.3
Lack of knowledge	0	0.0	4	26.7	5	33.3	6	40.0
Poor management	1	6.7	4	26.7	5	33.3	5	33.3
Low salary	0	0.0	3	20.0	3	20.0	9	60.0
Registry infrastructure	0	0.0	4	26.7	6	40.0	5	33.3
Lack of respect to Records Managers	0	0.0	0	0.0	6	40.0	9	60.0

Source: Field Data (2015)

The finding in the Table 3 above suggests the following observations. First, records managers in the ministries surveyed noted that there several factors which led them to fail to adhere to ethical practices in different levels of extent. Second, it shows that records managers have been affected with individual behaviour to operate adhere to ethical practices. Third, lack of respect and low salary are another features motivate or influence them to adhere to ethical practices which call upon the Government to make sure rectify these aspects. Fourth, lack of code of ethics for records managers also contribute to failure of records managers to adhere to ethical practices at work places.

Registry users' views on factors behind failure to adhere to ethical practices

Information and/ or registry users were asked to point out factors which led records managers to fail to adhere to ethical practices. The itemised variables on the failure factors and the extent to which record managers fail to adhere to ethical practice produced the following results and Table 4 presents the summary of the findings.

Table 4 Registry users' view on factors behind failure to adhere to ethical practice

	Not sure		Moderate		High		Very high	
Failure factors	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Lack of code of conduct	23	9.2	58	23.2	104	41.6	65	26.0
Individual behaviour	33	13.2	99	39.6	71	28.4	109	43.6
Poor supervision	50	20.0	113	45.2	55	22.0	32	12.8
Lack of knowledge	25	10.0	33	13.2	83	33.2	47.	18.8
Poor management	35	14.0	123	49.2	47	18.8	45	18.0
Low salary	29	11.6	75	30.0	80	32.0	66	26.4
Registry infrastructure	77	30.8	114	45.6	35	14.0	24	9.6
Lack of respect to records managers	23	9.2	54	21.6	89	35.6	84	33.6

Source: Field Data (2015)

Data in Tables 3 and 4 illustrate different failure factors and the extent to which records managers fail to adhere to ethical practices in their information service delivery at their work places. The data suggest the following observations:-

Individual behaviour: Many 12(80%) records managers reported that individual behaviour was a leading factor in inducing records managers towards failure to adhere to ethical practices. In this regard, a few 109(43.6%) of the information and/or registry users noted individual behaviour to be a low level factor in influencing records managers towards not adhering to ethical practices. Human resources officers, on the other hand, noted that individual behaviour was not only one of the leading factors behind the records managers' failure to adhere to ethical practices but also for other employees. They further pointed out that generally there was moral decay among employees that made them to ignore ethics at the workplace as an important issue. The human resources officers explained during interviews that not following the 1967 Arusha Declaration, whose code of ethics insisted on strict adherence to ethics among public servants, was behind the drastic slump in ethical conduct at the work place.

Lack of code of ethics: A few 65(26%) numbers of the information and/or registry users suggested that lack of a code of conduct for records managers influence fomented unethical workplace practices among their ranks. It was observed that other professionals such as teachers, lawyers and doctors had their own code of conduct over and above the general code of conduct for public services. In this regard, the human resources officers said during interviews that records management in Tanzania was a relatively new field with a few highly qualified personnel at the level of bachelor's or master's degree. These few individuals had been employed in different sectors in the ministry, particularly in the Department of Records and Archives Management. As a result, the most highly educated records managers in many of the governmental ministries were diploma holders. The implication is that the low level of education among records managers could contribute to delays in developing a code of conduct specifically for records managers.

Lack of respect for records managers: A good number 9(60%) of records manager and a few 84(33.6%) information and/or registry users pointed out that records managers were not respected compared to other employees. It was observed that other officers just called on or summoned records officers to take to them documents or files like they were house-helpers or house-servants. It was noted and observed that, it was also common practice for other employees to use harsh language with the records officers, particularly when the heads of department or section were in need for service. In this regard, the human resources officers confirmed that there were many cases reported by the records officers regarding the use of harsh or uncouth language and of lack of respect for them as professionals. It should be noted that many records managers or officers were female with low educational and professional qualifications. In the face of patriarchal system that still dictate how workers relate to one another, respecting young women who also happen to have low education appears to be out of the question for many patriarchal males. Indeed, data from the field show that more than a half of information and/or registry users are male; this situation creates a potential area for the largely female records managers to be disregarded or not accorded the respect they deserve. As a result, some of the records managers demoralised and failed to work hard and adhere to ethical practices.

Low salary: Many 9(60%) of the records managers and a few 66(26.4%) of the information and/or registry users noted that the records managers were generally paid low salary which might influence them not to work ethically. It should be noted that one of the suggestions or strategies for enforcing compliance with ethical practices among records managers was to increase their salaries. Indeed, the salary is one of the positive motivations for employees. In this regard, human resources officers confirmed that due to their low level of education the salaries of the records managers were also low. Initially, there were no university or college offering bachelor's degrees in records management in the country. As a result, records management was populated by low cadre marked by their limited educational and professional credentials. Recently, Mzumbe University had introduced bachelor's degrees in records management. This stage in one way or another would contribute towards strengthening the records management profession.

Lack of knowledge: Few 6(40%) records managers and information and/or registry users indicated that records managers have little or lacked knowledge on their information service provisions. It has been reported in previous sections that records managers faced a shortage of appropriate and relevant education to improve records management sector and foster professionalism. The Tanzania government in this regard has to make sure that records managers in public employment are trained to attain higher level educational qualifications such as bachelor's or master's degree as well as acquire other professional credentials so that they could be better placed to adhere to and comply with professionalism. Presently, the few well qualified records managers were not employed the registries but have been placed in different sections in different sectors. In this regard, the human resources officers observed that the majority of the records managers did not have qualifications that would allow them to embark on further studies in records management as they were recruited with low passes at the certificate levels.

Impact of failing Adhering to Ethical Practices

The study also sought to establish the impact of records managers' failure to adhere to ethical practices in their information service provision. In this regard, the respondents were requested to rank the impact for records managers' failure to adhere to ethical practices in their information service provision. The respondents were given items that they were supposed to rank accordingly (1 = not at all, 2 = slightly high, 3 = high, 4 = very high). Indeed, the respondents were also requested to consider other impacts not listed in the questionnaire. The subsequent sub sections present views of the impact of records managers' failure to adhere to ethical practices.

Records Managers' views on impact of failing adhering to ethical practices

This part of the data focused on data derived from records managers on the impact of failing to adhere to ethical practices among records managers. The itemised variables on the impact and extend of failure to adherence to ethical practice produced the following results. Table 5 presents the summary of the findings.

Table 5: Records managers' views on the impact of failing to adhering to ethical practices

Impact of unethical practices	Not sure		Moderate		High		Very high	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Lack of integrity of Records Managers	0	0.0	5	33.3	10	66.7	0	0.0
Miss understandings among employees	0	0.0	3	20.0	4	26.7	8	53.3
Failure of ministry to achieve its objectives	3	20.0	3	20.0	4	26.7	5	33.3
Un-satisfaction of registry users	2	13.3	3	20.0	4	26.7	9	60.0
Mistrust of Records Managers	0	0.0	2	13.3	4	26.7	9	60.0
Increase corruptions and bribe	0	0.0	0	0.0	2	13.3	13	86.7
Lack of transparency	0	0.0	1	6.7	2	13.3	12	80.0
Lack of reliability of information	1	6.7	2	13.3	3	20.0	9	60.0
Poor decision making	0	0.0	1	6.7	1	6.7	13	86.7
Lack of timely promotion	0	0.0	3	20.0	3	20.0	9	60.0
Lack of security at work place	0	0.0	0	0.0	3	20	12	80.0
Decrease justice and fairness	0	0.0	3	20.0	6	40.0	6	40.0
Reduces accountability	0	0.0	0	0.0	3	20.0	12	80.0
Decrease working morale among employees	1	6.7	2	13.3	3	20.0	9	60.0

Source: Field Data (2015)

Data from Table 5 illustrates different impact of failure to adhere to ethical practices among Records Managers in information service delivery at their work places. The data suggest the following observations:-

First, findings suggest that through non adherence to ethical practices in records management the government can face a lot of impact; findings indicate that many of the respondents ranked highly impact of increasing corruption and poor decision making. Records Managers have a role to play in order to control corruption and facilitate to improve decision making in the Government ministries. Second, accountability and transparency at government ministries are in danger if records managers do not adhering to ethical practice in the provision of services. Information ethics insists on the duty of all information professionals (records managers, librarians, archivists and information officers) to make sure accountability and transparency are observed. Indeed, an informed society through transparency increases the prospects of making informed decisions in day-to-day activities. Third, it is true with Records Managers as they have a potential role of making sure justice and fairness is done to all clients in all government ministries only if adhere to ethical practices.

Registry users' views on impact of failing adhering to ethical practices

Respondents were asked to identify and rank into levels of the impact which might occur if records managers could not adhere to ethical practices. The summary of their responses are summarised and presented in Table 6.

Impact of unethical practices	Not sure		Moderate		High		Very high	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Lack of integrity of Records Managers	16	6.4	37	14.8	92	36.8	105	42.0
Miss understandings among employees	10	4.0	32	12.8	102	40.8	106	42.4
Failure of ministry to achieve its objectives	38	15.2	64	25.6	68	27.2	80	32.0
Un-satisfaction of registry users	36	14.4	45	18.0	75	30.0	94	37.8
Mistrust of Records Managers	46	18.4	61	24.4	67	26.8	76	30.4
Increase corruptions and bribe	16	6.4	32	12.8	76	30.4	126	50.4
Lack of transparency	20	8.0	33	13.2	77	30.8	120	48.0
Lack of reliability of information	21	8.4	39	15.6	74	29.6	116	46.4
Poor decision making	13	5.2	14	5.6	77	30.4	146	58.4
Lack of timely promotion	3	1.2	23	9.2	101	40.4	123	49.2
Lack of security at work place	49	19.6	55	22.0	50	20.0	96	38.4
Decrease justice and fairness	20	8.0	33	13.2	77	30.8	120	48.0
Reduces accountability	42	16.8	58	23.2	59	23.6	91	36.4
Decrease working morale among employees	39	15.6	42	16.6	78	31.2	91	36.4

Table 6: Registry users' views on impact of failing adhering to ethical practices

Source: Field Data (2015)

Data in the Table 5 and 6, above suggest the following observations in the current study which leads to the following explanation:-

Increment in corruption and bribery: A good number 13(86.7%) of the records managers and a few 126(50.4%) information and/or registry users suggested that corruption and bribery may increase if records managers failed to work ethically in their information service provision. In this regard, the human resources officers noted that the records managers play a significant role in controlling or abetting corruption. It was reported that records managers were the ones who knew all the information circulating in a particular institution or organisation. In fact, records managers also concurred that if they hid some of the important documents informed decision-making might be compromised. In other words, records managers should facilitate access to and acquisition of all necessary requirements by working ethically in their information service provision.

Abetting poor decision-making; Records managers in any sector can abet poor decision-making if they fail to adhere to ethical practices. In this regard, many 13(86.7%) records managers and 146(58.4%) information and/or registry users agreed that this was the case. During the study, it was observed that records managers played a significant role in facilitating decision-making in different levels of management. Similarly, human resources officers agreed that records managers helped to provide accurate information to facilitate decision-making. They argued that all the important decisions regarding, for example, budgeting, transportation and any other issues require information at the finger tips for informed decisions to be made. Indeed, effective decisions cannot be reached if records managers or officers cannot provide accurate and timely information. After all, records managers facilitate decision-making when they know the value of the information they have, an understanding requiring ample professional education.

Lack of transparency: Records managers or officers help to ensure that transparency is maintained in their respective ministries. In this regard, the majority 12(80%) of the records managers and about half 120(48%) of the information and/or registry users pointed out that records managers can undermine transparency if they failed to work ethically. Human resources officers agreed that there are some problems which occurred when information was not provided on time. It was reported that the office of human resource cannot make any decision regarding the transfer, promotion and disciplinary measures if there was no requisite information on the table. Records managers or officers are the ones who can provide such information from personal files of an employee. Note that in the second objective it was reported that if records managers adhere to ethical practices will facilitate transparency of any activity at the ministry or any other organization or institutions. The important issue is to make sure records managers are trained, facilitated and motivated enough to make sure they work ethically.

Erosion of accountability: Generally, without facts or evidence no one can be held accountable. The study findings show that many 12(80%) records managers and a few 91(36.4%) information and/or users agreed that records managers can reduce accountability if they fail to work ethically. In this regard, records play a significant role in necessary in the provision of evidence for any unethical activities that require stern action. Also, the human resources officers in all ministries surveyed commented that without accurate records there could be no accountability of any officer or employee. There was a general consensus that records managers contribute a lot to making sure that officers and other employees were held accountable for their actions. Indeed, both types of registries—open and confidential—contribute a lot to providing information that is vital in the decision-making process. On the whole, accountability becomes elusive in the absence of key data and information.

Lack of timely promotion: Ethical practices in the records keeping sector tend to increase provision of accurate data and information in any organisation necessary for effecting promotions when they were due. In this regard, many 9(60%) of the records managers and about half 123(49.2%) information and/or registry users agreed that if records managers failed to adhere to ethical practices there would be lack of timely promotions. Indeed, the human resources officers reported that personnel records located in the registry constituted basic information for effecting promotions. They further commented that when records managers keep the records well them and availed them when needed on timely basis, then there would be few complaints. In this regard, it was observed that, apart from at the Ministry of Education and Vocational Training (MoEVT), in other ministerial departments there were few people who complained about delays of their promotions.

Conclusion

The findings of the study have indicated that records managers have a role to play in reduction or control of corruption practices in different government offices. This call upon human resources officers in government ministries to make sure records managers adhere to code of conduct available. Apart from code of conduct records managers are required to comply to all rules, regulations and procedure guiding records management. Second respondents comment that lack of a code of conduct for records managers influence fomented unethical workplace practices among their ranks. All ministries through Directorate of Archive and Records management formulate or introduce code of conduct specific for records managers; this will help or guide them to work ethically. It was observed that other professionals such as teachers, lawyers and doctors had their own code of conduct over and above the general code of conduct for public services. Third the findings suggest that through non adherence to ethical practices in records management the government can face a lot of impact such as increasing corruption and poor decision making. The study recommends that establishment of code of conduct or ethics special for records managers and further training for them is required.

Reference

Anangisye, W. A. L (2006), Educating Teachers, the Ethical Dimension on Teacher Professionalism in Tanzania. Doctoral Dissertation, University of Edinburgh, Edinburgh.

Babbie, E. and Mouton, J. (2001).*The Practice of Social Research,* with contributions by PayzeVoster and BoshoffProzesky. Cape Town: Oxford University Press.

Capurro R., (2007), Information Ethics for and from Africa: *International Review of Information Ethics*. 7 (09/2007).

Dwivedi, D.(2001). *Macroeconomics: Theory and Policy*. New Delhi: Tata McGraw-Hill Publishing.

Froehlich, Thomas (2004). "A Brief History of Records management."*In TextosUniversitaris de Biblioteconomia i Documentació 13.*

Kothari, C. R. (2008), *Research methodology: methods and techniques*. 2nd Revised ed. New Delhi, New Age International Publishers.

Lyaruu, T.(2005), Personnel records management in the public sector and its impact on the payment of pension: case study of selected ministries and government agencies. MA Thesis. Dar-es-salaam: University of Dar es Salaam.

Markinnon, B. (2011). *Ethics: Theory and Contemporary Issues*, 7th ed. Belmont, CA: Wadsworth Publishing Co.

Ndenje-S.E. (2010), The significance of records management to fostering accountability in the Public sector reform programmme of Tanzania. PhD. Thesis, University of Kwa-Zulu Natal.

Sabina C., Zdzislaw G., and Barbara S. (2005), Code of conduct for librarians and records managers: issued by the Polish Librarian Association.

Tweve, J. T. (2012), *"Practices of teaching information ethics in Tanzania".* Paper Presented at African Network for Information Ethics (ANIE) Conference, 3rd to 7th

Wamukoya, J.(2000). Improvement of Public Sector Records in Ghana, The Gambia and Tanzania: Lessons for Kenyan Archivists. Paper Presented During the KNADS Biennial Seminar, Nairobi, 25-29 October 2000.

AGRICULTURAL INFORMATION SERVICES AND FOOD SECURITY

USE OF ICTS IN SHARING AGRICULTURAL INFORMATION AMONG FISH FARMERS IN THE SOUTHERN HIGHLANDS IN TANZANIA

Ronald Benard
Lecturer,
Sokoine University of Agriculture, Tanzania

Frankwell Dulle
Professor and Head of Department of Knowledge Management
Sokoine University of Agriculture, Tanzania

H. Lamtane
Senior Lecturer
Department of Animal, Aquaculture and Range Sciences, Sokoine University of Agriculture, Tanzania

Abstract

This paper assesses the use of ICTs in sharing agricultural information among fish farmers in the Southern Highlands of Tanzania. The main objective of the study was to assess the use of ICTs among fish farmers in sharing agricultural information. Specifically, the study focused on: assessing types of ICTs preferred by fish farmers in sharing agricultural information; determining the degree of ICTs usage among fish farmers in sharing agricultural information; and examining the influence of socioeconomic characteristics on fish farmer's ICTs preferences.

The study was carried out in twelve purposeful selected divisions in six districts of the three regions of Southern Highland of Tanzania namely Ruvuma, Mbeya and Iringa. It involved 240 fish farmers who were randomly selected. The study employed a cross section research design and used quantitative and qualitative research approaches in collecting data. The employed questionnaire, Focus Group Discussion, observation and key informants interview in data collection. Quantitative data were analyzed by using both descriptive and inferential statistics with the aid of SPSS version 20 while qualitative data were analyzed using content analysis.

The study found that mobile phones, radio and television were most used by the fish farmers in sharing agricultural information while the internet was least used. Likewise, results showed that television was the most preferred ICT tool by fish farmers in information sharing. Further results showed that ownership of television had a positive significant relationship with the farmers' preferences toward its usage at probability level of 0.005. Moreover, the paper concluded

and recommended that since ICT tools play an important role in communicating and sharing relevant and current agricultural knowledge and information to farmer's communities, the Government should support fish farmers by subsidizing some costs that more fish farmers can acquire and use them.

Introduction

In fish farming, information is key a determinant of fish farming production as farmers' need to be updated with various fish farming technologies necessary for for higher yield. Ijatuyi *et al*., (2016), Oladele, (2006) point out that information is vital for increasing fish farming production and improving the marketing and distribution strategies of fish products. Information also opens windows of sharing experiences, best practices in fish farming production, sources of financial aids and new markets. In addition, Soyemi and Haliso (2015) mention the potentials of information use in aquaculture to include; awareness on various improved fish farming technologies; awareness on improved fish breeds, fish feeds and fish feeding; and increased productivity. Hence, fish farmers need to be updated with current information in order to improve their fish farming management practices thus improving fish productivity.

For fish farmers to be productive in fish farming they need to be informed and updated with information in breeds and spawning, storing and preservation, fish processing, stocking operations, feed formulation techniques, feeding operation and record keeping (, Ijatuyi *et al*., 2016*;* Adefalu et al., 2013*;* Ofuoku, et al, 2008). All these types of information need to reach farmers through appropriate communication channels and in right time. In view of that Barguma and Ndaghu , (2014) and Joel, and Adigun (2013), state that one of the ways to bring about enhancement in fish farming production is the provision of right information through appropriate source that is accessible to fish farmers whose such information are meant for. This calls for use of ICTs in sharing information among fish farmers in Tanzania.

ICTs facilitate the availability and accessibility of information to fish farmers and reduce the cost of sharing and disseminating information to fish farmers. Okello et *al.,* (2014), Barguma and Ndaghu (2014), argue that unlike the traditional agricultural information dissemination methods, ICT tools have the benefit of offering a cheaper way of communicating and sharing knowledge and information to fish farmers in the fastest way; delivering training and education modules to farmers; and improving farmers' access to markets and aquaculture credit. Moreover, ICT tool empower fish farmers to negotiate better prices and facilitate and strengthen networking among fish farmers (Barghuma and Ndaghu, 2014), .In addition, Richad *et al..* (2010) Matuha (2015), argue that fish farmers can apply ICTs to increase farm productivity by matching cropping practices to climatic trends, use inputs and resources optimally, and ensure good fish farming practices through improved breeds, feeds and pond management. Likewise, Akinbile and Alabi (2010) point out that the enhancement of fish farming production can be achieved by improving the capacity in terms of enhancing access to information which can be achieved through enhanced information seeking behavior by the use of Information Communication Technologies.

However, the extent to which ICTs have been used in provision of fish farming information to fish famers in Tanzania is not known. This is confirmed by Chilimo (2009) Benard and Dulle, (2017) who reported that despite the strong belief in the role of ICTs for social economic development, clear evidence on how ICTs can be used to achieve this purpose in the Tanzanian context is still lacking. Thus, this study specifically, intended to: assess the types of ICTs preferred by fish farmers in sharing agricultural information; determine the degree of ICTs usage by fish farmers in sharing agricultural information and examine the influence of socioeconomic characteristics on fish farmer's ICTs preferences

Methodology

This study was conducted in the Southern Highlands of Tanzania namely Iringa, Mbeya and Ruvuma. These Southern Highlands regions (Ruvuma, Iringa and Mbeya) were selected because they are among the areas in Tanzania where fish farming production is in large amount and also have high development in ICT infrastructure compared to another regions in the country (FAO, 2017). . The study districts were chosen basing on the higher production of fish farming and presence well-established ICT infrastructure. Basing on the mentioned criteria two districts from each region namely Mbinga and Songea districts of Ruvuma Region, Mbeya and Mbarali districts of Mbeya Region, and Iringa and Mufindi districts of Iringa Region were chosen for this study. From each district, two divisions with at least twenty (20) fish farmers and good ICTs infrastructure were selected purposefully. Twenty fish farmers were randomly selected from each division basing on ownership of at least one type of ICT tool. This made a sample size of 240 respondents. Saunders *et al.* (2007) argued that a sample size of 30 or more can usually result in a sampling distribution that is very close to the normal distribution and the larger the absolute size of a sample, the closer its distribution will be the normal distribution.

To attain the main objectives and the purpose of the study, a cross-sectional research design was adopted. The design allowed a researcher to collect data at once in a single point. The study used both quantitative and qualitative approaches. Both primary and secondary data were collected. Quantitative data were mainly collected using a structured questionnaire while qualitative data were collected from key informant interview and Focus Group Discussions. An interview guide was used for the interview with 6 key informants (one fishery officer in each of the six districts were selected purposefully); an observation guide was used for collecting data through observation while a Focus Group Discussion guide was used during discussions with 48 fish farmers who have been practicing fish farming for at least five years. One Focus Group Discussion with eight participants was held in each of the selected districts. Barbour (2011) recommends that eight participants per session is an adequate number for Focus Group Discussions (FGDs).

Data Analysis

Collected and coded data were analyzed using Statistical Package for Social Sciences (SPSS) Version 20. Descriptive and inferential statistics such as frequency distribution, percentage analysis, and binary logistic regression analysis was used to test the strength of association among variables. On the other hands, Omnibus test and Hosmer and Lemeshow was used to test the fitness of the binary logistic regression model that was used. Content analysis was used for analyzing qualitative data and presenting it theough summaries and explanations.

Results and Discussion

Social economic characteristic of the respondents

The socio-economic characteristics of the interviewed fish farmers were analyzed and presented in Table 1. From Table 1, 48 (20%) of the respondents were females while 192 (80%) were males. This infers that more males are involved in fish farming than females. These findings are in line with Uzezi (2015) from Nigeria who reported that males engage more in fish farming than females. This may be due to the fact that in Tanzania women are sometimes not entitled to own land, this make it hard for some women to invest in fish farming. Chenyambuga et al., (2014) and Mwaijande and Lugendo (2015) insist further that local customs and cultural practices in many farming systems in Tanzania make it impossible for a woman to own assets and land as these are attained mainly through inheritance which favours men to own assets.

Furthermore, findings report that 47.1% of the respondents were in the 47 to 56 age group (Table 1). This implies that most of the fish farmers in the study area were within the economically active age group. According to Olaoye *et al* (2014) ages between 40 and 50 are considered highly productive and active to undergo energetic task associated with fish farming activities. Also from Table 01 it indicates that majority of the fish farmers in the study area, had at most, primary school education. It has been claimed that level of education may affects information accessibility, comprehension and adoption of modern agricultural practices (Kughur et all., 2015).

Furthermore, it was found that large percentages of the respondents were married couples (Table 1). Likewise, research findings show that 72.9% of the respondents had fish farming experience of up to five years (Table 1). This experience in fish farming is similar to that reported by Barguma and Ndaghu (2014) from Nigeria. This implies that majority of the respondents had experience in practicing fish farming activities at the study area. It was found that 45.4% of respondents had an income level of more than Tsh. 1,500,000/= per year. This implies that the income level of the fish farmers in the study area was below the per capital income of Tanzanian citizen which is Tsh. 2,100,000/= per year (TNBS, 2016). The low income of the fish farmers in the study area could be due to low information accessibility. According to Fadoyin *et al*. (2015) the level of income may influence farmer's information accessibility and use.

Table 1: Social economic characteristic of the respondents (N= 240)

Factors	**N**	**%**
Sex		
Male	192	80.0
Female	48	20.0
Education level		
No formal education	15	6.3
Primary education	163	67.9
Secondary education	39	16.3
Tertiary education	23	9.6
Age (years)		
18 – 35	40	16.7
36 – 46	71	29.6
47 – 56	113	47.1
57 – 66	16	6.7
Marital status		
Single	18	7.5
Married	211	87.9
Divorced	3	1.2
Separated	1	0.4
Household income (Tsh.)		
Less than 500,0000	38	15.8
500,001- 1000 000	60	25.0
1000 001 – 1500,000	33	13.8
More than 1500,000	109	45.4

Farming experience(years)		
Up to 5	175	72.9
6 – 10	51	21.2
More than 10	14	5.8

The extent of ICTs use in sharing agricultural information by fish farmers

This study investigated the most common ICT tools used by fish farmers for sharing agricultural information. The most often used ICTs by fish farmers in sharing agricultural information were mobile phones, radio and television respectively (Table 2).

The results revealed that, mobile phones were mostly used. This could be explained by fact that mobile phones are easily accessible, available, cheap and facilitate a two-way communication for fish farmers to seek for some more clarification and get instantly feedback. This was evidenced during Focus Group Discussions and Key informant interviews where it was reported out that most fish farmers preferred to use of mobile phones than other ICT tools because they are more convenient.. For example, during FGD one farmers from Sadani Village in ……. District pointed out that *"With a mobile phone I can communicate with fishery officers and ask for some information related to weather, market, credits, fish pond construction, fish feeding, source of fingerings and other information without necessarily traveling a long distance to meet them"*. Likewise, some fishery officers pointed out that they use mobile phones more frequently because they help them to overcome problems of transport. With mobile phones, they don't need to travel to visit farmers located far away. They can just call them when there is new knowledge or information. The findings of this study are in line with those of Chavula (2014) and Eucharia et all., (2016) which also found that mobile phones are the most used ICT tools among fish farmers because of their availability, wide coverage, and being accessed at a modest cost.

Furthermore, findings revealed that radio was the other ICT tool used by fish farmers in sharing agricultural information. The high usage level of radio is explained by its affordability, flexibility, ease language comprehension and its credibility in communicating timely, and relevant agricultural information to farmers. During focus group discussion it was reported that radio programmes aired to farmers were useful and enriched them with relevant and credible information on how to improve their fish farming management practices. For instance, during FGDs in Kigonsera Village in Mbinga Dstrict one farmer pointed out that '*listening to radio programmes related to fish farming has helped me to construct a fish pond with acceptable dimensions*'. The use of radio in sharing information to fish farmers is also supported by Njoku (2016) who describe that radio is very effective and credible medium in agricultural technology transfer to rural farmers.

Findings indicate that even though television programmes are credible and key sources of information to farmers, few fish farmers mentioned to access information through these ICT tool as compared to radio and mobile phones (Table 3). This observation contradicts with results of Aphunu and Atoma (2011) and Eucharia *et al*. (2016) who reported that majority of the fish farmers used television more frequently in sharing fish farming information. Based on findings accessed through FGDs, this disparity is explained by the high cost of purchasing television sets, lack of electricity in most rural areas and in appropriate time for broadcasting agricultural programmes related to fish farming.

Table 2: The extent of ICTs usage in accessing agricultural information by fish farmers

ICTs	**Mobile phone**		**Radio**		**TV**	
	n	**%**	**N**	**%**	**n**	**%**
Never	19	7.9	32	13.3	95	39.6
Rarely	70	29.2	135	56.2	71	29.6
Occasionally	56	23.3	45	18.8	25	10.4
Frequently	86	35.8	27	11.2	46	19.2
Very frequently	9	3.8	1	.4	3	1.2
Total	240	100.0	240	100.0	240	100.0

Types of ICTs preferred by fish farmers in sharing agricultural information

Table 3 summarizes the preferences of ICT tools among fish farmers. The findings reported that television was the most ICT tool preferred by fish farmers in information sharing followed by radio and mobile phones while the least preferred ICT tool was internet. This is probably because with television farmers can see and learn what others practice, it is also a credible source of information which can communicate various fish farming technologies to farmers within a short time of period. According to Sharma et all., (2008) and Benard et al. (2014), television and radio play main part in transferring current and relevant agricultural technology to educated and uneducated farmers within a short time.

Likewise, radio was another preferred ICT tool among fish farmers after television. This can be explained by the fact that with radio farmers can access relevant and currently information from anywhere and during any time at reasonable cost. According to Sharma et all., (2008) radio is preferred by farmers because it is an effective medium that can be used to reach masses of rural farmers irrespective of age and the level of literacy (Tire, 2006). In relation to cost, it is an extremely cost effective medium as compared to other extension media and methods involving individual and group contacts (Kakade, 2013).

Another ICT tool mentioned to be preferred by fish farmers in information sharing is mobile phone. Preference to mobile phone is explained by its easily availability, affordability, ability to facilitate a two-way communication. Moreover, with mobile phone it is easy to get immediate or instantly answers or feedback. In supporting this Freeman and Mubichi (2017) argued that information from mobile call-up is cheap, reliable and easy to use oppositely to information from radio program and television. This was justified during Focus Group Discussions and Key Informant Interviews where it was found that most fish farmers preferred to use mobile phones because they are affordable and convenient to use. For instance, during FGD a farmer from Kigonsera Village from Mbinga District pointed out that *"with mobile phones, I can communicate with my fellow farmers asking for some important information regarding to fish feeding, acceptable fish ponds dimensions, how to deal with fish predators, source of fingerings and other information with less effort and time*''.

Findings indicate that internet was the least preferred ICT tool among fish farmers in information sharing. This is probably due to lack of ICT infrastructure in rural areas, illiteracy among fish farmers, lack of skills on how to use internet, lack of awareness of the role of the Internet as an important source of agricultural information, and most of the fish farmers cannot afford to invest in computers or smart phones. This observation is not surprising because Malhan and Rao, (2007) also reported that the Internet is less used in developing countries due to poor information infrastructure and high poverty levels among rural communities.

Table 3: Types of ICTs preferred by fish farmers in sharing agricultural information

ICTs	**Mobile phone**		**Radio**		**TV**		**Internet**	
	n	**%**	**N**	**%**	**n**	**%**	**n**	**%**
Most preferred	94	38.1	137	57.3	192	80.3	48	20.1
Preferred	102	42.7	42	17.6	14	5.9	6	2.5
Slightly preferred	40	16.7	50	20.9	25	10.5	52	21.8
Not preferred at all	6	2.5	10	4.2	8	3.3	133	55.6
Total	240	100.0	240	100.0	240	100.0	240	100

The influence of socio-economic characteristics on fish farmer's ICTs preferences

Before running the regression model, Omnibus test and Hosmer and Lemeshow was done in order to detect whether the data fit in the model. The model fits very well as indicated by Hosmer and Lemeshow test model coefficients which are above 0.05 (Table 4). Results from the binary logistic equation indicate that the variables influencing ICTs preference contributed by 5.2% and 9.2% as explained by Cox and Snell R square and Nagelkerke R square values.

Table 6 shows that Wald statistics are non-zero values, which implies that there is interaction between the dependent and independent variables. According to Norusis (1990) and Powers and Xie (2000), the non-zero Wald statistic values indicate the presence of relationships between the dependent and explanatory variables. Thus, on the basis of the results of this study the null hypothesis was rejected in favour of the alternative hypothesis that socio-economic factors significantly influence the preferences of ICTs at 5% level of significance.

Out of the 10 socio-economic characteristics that were regressed on fish farmers' ICTs preferences, only television ownership had positively relationship and statistically significant at 0.05 level of probability (Table 6). This implies that ownership of television set increases the likelihood of preferring it in sharing and accessing agricultural information. The same relationship was observed by Nyamba and Mlozi (2012) who reported that farmers who owned mobile phones were more likely to use them for communicating agricultural information. The reasons could be explained by the fact that farmers will prefer to use something which belong to them rather than borrowing it from someone else.

Table 4: Test statistics

Tests	**χ^2**	**df**	**P-value**
Model evaluation (overall):			
Likelihood ratio test (Omnibus Tests of Model Coefficients)	10.045	8	.262
Goodness-of-fit test:			
H-L test	2.867	8	.942
Cox & Snell R^2 = . .052			
Negelkerke R^2 = .092			

Table 5: Variables used in the binary regression equation

Variable	*Description*
Y	Preference of ICTs use (0 = No, 1 = Yes)
X_1	Sex (0=female, 1=male)
X_2	Age (years)
X_3	Education level (0=no formal education, 1=formal education)
X4	Household size
X5	Total income earning per annum (Tshs)
X6	Farm size (hectors)
X7	Power source
X8	Quantity harvested
X9	Access to extension
X10	The number of televisions owned
X 11	The number of Radio owned
X12	The number of mobile phones owned
X13	The number of computer owned

Table 6: Logistic Regression on the influence of socio-economic characteristics on fish farmer's ICTs preferences

Variables in the Equation	B	S.E.	Wald	df	Sig.	Exp(B)
X1	-.584	.547	1.137	1	.286	.558
X2	.000	.018	.000	1	.999	1.000
X3	-.077	.085	.819	1	.366	.926
X4	.452	.738	.375	1	.540	1.571
X5	.000	.000	1.175	1	.278	1.000
X6	-.364	.491	.549	1	.459	.695
X7	.000	.002	.081	1	.775	1.000
X8	-.022	.478	.002	1	.963	.978

X9	.474	.553	.735	1	.391	1.606
X10	.009	.275	.001	1	.974	1.009
X11	**1.122**	**.542**	**4.276**	**1**	**.039***	**3.069**
X12	19.518	1.176E4	.000	1	.999	2.997E8
X13	1.677	1.238	1.836	1	.175	5.351

Conclusion and Recommendations

ICT tools are becoming more and more important in communicating and sharing relevant and timely agricultural knowledge and information to farming communities. However, access to ICT and supporting infrastructure is important for increased accessibility and sharing of agricultural information among fish farmers. Moreover, enhancing access agricultural information through the most preferred ICT tools is important. However, ownership of preferred tools strongly influences usage of preferred ICT tools for sharing and accessing agricultural information among fish farmers. It is therefore recommended that the government should promote private and community provision engagement in broadcasting agricultural information, widening access to internet services and establishing telecenters equipped with ICT tools so as to increase the sharing and accessibility of agricultural information among fish farmers. Also, the government should subsidize the cost of some ICT tools that more fish farmers can afford them and use them for accessing and sharing agricultural information.

References

Akinbile, I. A. and Alabi, O.F. (2010). Use of ICTs among fish farmers of Oyo State. *Journal of Agricultural Extension* 14 (1) : 25-35.

Barguma KA, Ndaghu AA 2014. Information accessibility among fish farmers in Girei, Yola-North and Yola-South local government areas, Adamawa State,Nigeria ARPN. *Journal of Science and Technology*, 4(8): 503-507

Benard, R, Dulle, F, Nagalapa, H. (2014). Assessment of Information Needs of Rice Farmers in Tanzania; A Case Study of Kilombero District, Morogoro, Library Philosophy and Practice (e-journal). Paper 1071: 1-34.

Benard,R and Dulle, F. (2017), Application of ICT tools in communicating information and Knowledge to artisanal fishermen communities in Zanzibar, *Knowledge Management &E Learning, 9(2)*

Chenyambuga, S W., Mwandya, A., Lamtane, H A and Madalla, N .A. (2014). Productivity and marketing of Nile tilapia (*Oreochromis niloticus*) cultured in ponds of small-scale farmers in Mvomero and Mbarali districts, Tanzania, *Livestock Research for Rural Development. 26(43*

Eucharia, Ejiogu-Okereke, Ngozi Dr; Ubochioma, Chikaire, Jonadab Dr; Ifeanyi, Ogueri, Emmanuel Dr; and Patience, Chikezie,Ngozi Dr, (2016). "Roles of Information and Communications Technologies in Improving fish farming and production in Rivers State,Nigeria." Library Philosophy and Practice (e-journal). 1445.http://digitalcommon s.unl.edu/libphilprac/1445

Freeman ,K and Mubichi, F., (2017). ICTs use by smallholder farmers in rural Mozambique:A case study of two villages in central Mozambique, *Journal of Rural Social Sciences*,32(2)

Ijatuyi, E,J., Abiou ,O, A., and Olaniyi, O,A.,(2016). Information Needs of Fish Farmers in Osun-State. *Nigeria Journal of Human Ecology* 56(3): 309-317

Joel, A.S, and Adigun, G.O. (2013). Use of Information and Communication Technologies(ICTs) by Yam Farmers in Boluwaduro Local Government A rea of Osun State, Nigeria. *Library Philosophy and Practice (e-journal). 1018*

Kughur PG, Ortindi PI, Katikpo G (2015). Factors affecting farmers' accessibility to agricultural information in Gwer-East local government area of Benue State, Nigeria, *International journal of information and communication technology research,* 5(10).

Malhan, I.V. and Rao, S (2007) "Agricultural knowledge transfer in India: A study of prevailing communication channels" *Journal of Library Philosophy and Practice* Vol.9 (2) http://www.webpages.uidaho.edu/~mbolin/malhan-rao.pdf retrieved on 27 December, 2017.

Moagi, T. M., and Oladele, O. I. (2012). Analysis of Information Needs among Land Redistribution for Agricultural Development Beneficiaries in Waterberg District, Limpopo Province,South Africa. *Journal of Human Ecology* 39(2): 95-101

Nyamba, S. Y. and Mlozi , M. R. S. (2012). Factors Influencing the Use of Mobile Phones in Communicating Agricultural Information: A Case of Kilolo District, Iringa, Tanzania. *International Journal of Information and Communication Technology* 29 (7): 838 – 845.

Ofuoku, A.U. Emah, G.N. and Itedjere, B.E. (2008), Information utilization among rural fish farmers in central agricultural zone of delta state, Nigeria *World Journal of Agricultural Sciences*4 (5), 558-564.

Olaoye, O. J, Ashley-Dejo, S. S, Fakoya, E. O, Ikeweinwe, N. B, Alegbeleye, W. O., Ashaolu, F. O., & Adelaja, O. A. (2013). Assessment of Socio-Economic Analysis of Fish Farming in Oyo State, Nigeria. *Global Journal of Science Frontier Research Agriculture and Veterinary*13(9): 1-12.

Saunders, M., Lewis, P. and Thornhill, D (2007). Research Methods for Business Students. 4th ed.Prentice Hall, London. Pearson Education Limited Pg. 226.

Sharma, A.K. Jha, S.K. Kumar. Sachana, R.C and Kumar, A (2008). Critical analysis of information sources and channels preffered by rapeseed Mustard farmers, *Indian Res. J. Ext.Ed.,* Vol.8 (2&3) http://www.seea.org.in/vol8-2-2008/11.pdf retrieved on 15 November, 2017.

Tire, M (2006), An evaluation of the information dissemination mechanisms for small scale farmers subsistence farmers**.** Dissertation for award of M.A Philosophy University of Stellenbosch in Cape Town.

Uzezi, O.P (2015). Agricultural and information needs and utilization among migrant fishermen by gender: A study of Isoko reverie community, Delta State, Nigeria. *Journal of Emerging Trends in Computing and Information Sciences*, 6(5): 265.

THE ROLE OF TELECENTRES IN THE PROVISION OF AGRICULTURAL INFORMATION IN MALAWI

Sellina Khumbo Kapondera
Lecturer, Department of Library & Information Science, Mzuzu University, Malawi,

Winner Chawinga
Lecturer, Department of Library & Information Science, Mzuzu University, Malawi,

Felix Majawa
Senior Lecturer, Department of Library & Information Science, Mzuzu University, Malawi,
and
Jessy Mphunda
Assistant Librarian, Chancellor College, University of Malawi, Malawi

Abstract

Information and Communication Technologies (ICTs) are powerful tools for development. In developing countries like Malawi where majority live in rural areas and rely on agriculture, ICTs are essential in providing access to agricultural information and agricultural. Therefore, establishment of telecentres which stock ICTs in rural areas offers potential to increase the access and provision agricultural information. The study reported in this paper aimed at investigating role of telecentres in the provision of agricultural information in Malawi. Specifically, the study examined: agricultural information needs of the communities that the telecentres serve; the types of agricultural information that the telecentres provide to the communities; and the challenges that the telecentres face when providing agricultural information to the communities they serve. The questions were explored by a means of one telecentre, Goliati Telecentre that was chosen purposively. Qualitative data were collected form users, nonusers and telecentre management. Observations were also conducted within the Telecentre and the library. The study reveals that communities surrounding the telecentre need information on pest and pesticides; available markets for agricultural produce and market prices; and good agricultural practices. The study further revealed the telecentre is not active in providing agricultural information as people only relied on other means such as interpersonal channels other than the telecentre. The telecentre faces different challenges ranging from infrastructural to misunderstanding of the communities. The paper recommends that the telecentre should take an active role in providing the agricultural information based on the needs of the *community. Furthermore, the telecentre has to address the challenges to be effective to the community in agricultural development.*

Key words: *Information; Agricultural Information; Telecentres; Goliati Telecentre; Malawi.*

Introduction

Information and Communication Technologies (ICTs) are considered to be powerful tools for fostering development. ICTs have the potential to enable people easily access to educations services, healthcare, government information and other services; and furthering socioeconomic development of disadvantaged communities (Dangal 2011). In developing countries like Malawi where majority lives in rural communities and rely on agriculture (BBC News 2017), ICTs are a powerful tool for providing agricultural information and agricultural development. Therefore, establishment of telecentres which offer public access to ICTs (Rega 2010) in rural areas offers potential to increase the access and provision of agricultural information in rural communities (Mbangala & Samzugi 2014). For example, telecentres provide farmers with access to information on better farming methods and techniques; and market information (Buhigiro, 2012).

However, though telecentres exist in Malawi, limited research has been conducted to understand their role in provision of agricultural information. Therefore, this paper aimed at investigating the role of telecentres in the provision of agricultural information in Malawi. Specifically, the study examined: agricultural information needs of the communities that the telecentres serve; the types of agricultural information that the telecentres provide to the communities; and the challenges that the telecentres face when providing agricultural information to the communities they serve. The questions were explored by the means of one community telecentre, more details of which are provided in Section 3.

Brief Literature Review

Agricultural information needs of people surrounding telecentres

There is limited literature assessing the role of telecentres in providing agricultural information. However, the limited literature available on the agricultural information needs of rural dwellers indicate that people in rural communities need information on financial facilities that would help them in farming, agricultural marketing (Association for Progressive Communication 2010; Tumsifu & Silayo 2013; Abdulhamed 2017) and pest management (Abdulhamed 2017; Association for Progressive Communication 2010); fertiliser or harvesting (Association for Progressive Communication 2010).

Farmers in rural areas also need information on crop and livestock husbandry and value addition (Tumsifu & Silayo 2013).

The types of agricultural information that the telecentres provide to the communities

Telecentre help in meeting agricultural information needs of rural communities by improving access to markets for agricultural and other business products through radio programs adverts, allowing farmers to advertise their products through the local radio, communicate with their customers through telephones available within the telecentre; and provision of modern technology to sell products online (Mbangala & Samzugi 2014). Telecentres also provide weather information and prices for market to farmers (Buhigiro 2012).

Challenges that the telecentres face when providing agricultural information

Despite this potential of providing agricultural information, in some areas people still rely on other means of accessing information like interpersonal channels (Association for Progressive Communication 2010; Tumsifu & Silayo 2013). Furthermore, the contribution of telecentres towards the provision of agricultural information is limited by myriad challenges. Some of the challenges include: financial sustainability, perception that telecentres are for the youths (Hallberg, Kulecho, Kulecho & Okoth 2011), and under-utilization by the targeted communities (Association for Progressive Communication 2010; Kapondera & Hart 2016).

Research Design and Methodology

The study employed a case study approach of one telecentre- Goliati Telecentre in Thyolo District of Malawi. The Telecentre is located at Goliati Trading Centre about forty kilometers from Blantyre. It is surrounded by primary and secondary schools, selling point of milk from local farmers and a market. The catchment area is composed of six villages (Chikumba 2010). The Telecentre is located in a building of which the other side is a library operated by National Initiative for Civic Education (NICE). The library is operated by a volunteer and it is opened on Mondays, Wednesdays and Fridays from 9AM to 3PM. The services offered include: Airtel Money and TNM Mpamba (which allow people to send and receive money), typing and printing, photocopying, binding, lamination, computer tutorials and Internet services. However, during data collection in September 2017, the Telecentre had no Internet connection. The Telecentre had stayed for four years without Internet connection.

The Telecentre was chosen because it is the oldest Telecentre in the country that was opened in 2007 and officially launched in 2009 (Chikumba 2010). The respondents included the users, non-users and the Telecentre management (two telecentre staff and the librarian). There were nine users and six non-users. Users were those who visited the Telecentre or Library while non-users were those who had never used the Telecentre. Convenient sampling technique was used to identify the users and non-users as they were those found within and close to the Telecentre. Qualitative data were collected through interviews. The interviews were chosen because they allowed to get responses even from those who were illiterate (Kajornboon, 2005). Interview guides contained open ended questions to allow participants provide rich and in-depth responses (Mamba & Isabirye 2015). The interviews with users, non-users and the librarian were in Chichewa while English was used to interview the Telecentre staff. We also conducted observations within the Telecentre and library.

Thematic analysis techniques were employed to analyse the data. The researchers transcribed the data, searched the themes, reviewed them and refined the themes to avoid duplicating the themes (Braun & Clarke 2006). Codes are used to identify respondents. Prefix US (followed by sequential number) is used for users. On the other hand, prefix UN is used for non-users. Prefix in either case is followed by sequential numbers to come up with the codes. For example, the code for user number 2 is US2; and NU2 represents non-user number.

Results and Discussion

As stated in section 3, we collected data from nine users (9), six non-users (6), the librarian and the Telecentre management. Table 1 summarises demographic characteristics of users and non-user. Users' age ranged from 18 to 59; while non-users were aged between 23 and 40. In terms of gender, there were more males (5) than females (4) on the users' side; while for non-users it was vice versa as there were more females (5). This is in line with the literature that majority of telecentre non-users tend to be females (Kapondera & Namusanya 2017; Neville, 2012). Users were more educated than nonusers as most users (6) had at least a junior secondary school qualification. On the other hand, of the 6 non-users 4 did not complete primary school education. The finding on users being more educated than non-users agrees with the previous studies in literature (for example, Kapondera & Hart 2016). This could be attributed to the fact that telecentres in many communities are perceived to be for the educated (Kapondera & Hart 2016). As for occupation, majority were farmers. These included those who engage in small scale farming to earn a living. A good number of respondents in both categories were involved in business. When asked on the type of business, all these indicated that they were small scale traders of agricultural produce.

Table 1: Demographic characteristics of users and non-users

		Number of respondents	
		Users	Non-users
Education	Did not complete primary school	2	4
	Primary school qualification	1	1
	Junior secondary school qualification	4	1
	Senior secondary school qualification	2	0
Occupation	Student	3	0
	Farmer	4	3
	Business	2	2
Gender	Males	5	1
	Female	4	5

Uses of the Telecentre

Many people coming to the Telecentre used the Telecentre for Airtel Money or TNM Mpamba services which allowed them to send or receive money. A good number of users also used library, printing and photocopying services.

Agricultural Information needs of people surrounding the Telecentre

Most of the respondents engage in small scale farming.

For example, some grow tomatoes and sell it while some grow maize. Both users and non-users were asked to indicate type if agricultural information that they need in their farming activity. The results, as descried bellow, indicate people surrounding the telecentre needed information on pest and pesticides, available markets for their farm produces and good agricultural practices that would help them harvest abundant yield.

Pests and pesticides: the most needed agricultural information was about pests and pesticides. This was especially common among those who grew tomatoes. One of the respondents, a user, said: "as for me, I need those people in agriculture providing us with information on the pests and best/appropriate pesticides for our crops" [US1]. Another respondent, a non-user, in agreement said that she needed information on pests and pesticides because lack of this knowledge made her family lose tomatoes to some pests. This is evident in the following:

> *"I really want to know especially concerning my farming activities is how to take care of tomatoes. Like recently we planted tomatoes but we lost all of them to some pests whose names I do not know*

> *bust they destroyed all the tomatoes we had. So, I want to know what exactly the problem is and what pesticides we can use and how we can find the pesticides…. It was a lot, like 3000 plants, but we lost all these including the fertilizer and the money we used to buy the pesticides…"[NU1].*

Markets and market prices: being farmers and that they considered farming something that could help earn money for a living, they needed information on available markets and market prices for their agricultural produce. They believed that this information could help them make profits. A non-user who grows tomatoes and potatoes said "we also need information on markets where we can sell our crops. Like now I grow potatoes but we do not make profits because we just sell them locally. So, I need information especially on the right prices and where I can be selling them so that I make some profits, you know.." [NU5]. The finding is in line with the findings of previous studies that farmers need information on available markets and prices (Tumsifu & Silayo 2013; Abdulhamed 2017).

Good agricultural practices for bumper yield: In general, users needed information on good agricultural practices to have bumper yields as evident in the following comments:

> *"I basically need information on proper fertilizer and the proper soil for our crop for a good harvest' [US1]. "need information on proper farming practices like how to take care of the our crops, weeding and any other information that would make us harvest bumper yields" [US4]*
> *"we need information concerning crops and other things that would help in farming" US2.*

The type of agricultural information that Goliati Telecentre provides to the community

The results obtained from respondents showed the agricultural information is not available within the Telecentre. Observations also confirmed that there was no agricultural information within the Telecentre. As indicated above, there was no Internet connection which would help farmers obtain agricultural information online.

In addition, observation indicated that there was no agricultural information within the library except for one book which is on cotton farming yet people in the area are not involved in growing cotton. Interviews with the Telecentre Management indicated that they do not consider provision of agricultural information as one of the activities they should be involved in. One of the Telecentre staff said: "when it comes to agriculture, I need to be honest, we have never taken part in providing agricultural information. I think we do not see it as one of the things that as a telecentre should be doing …" [Telecentre Management].

When users and non-users asked how they find the information needed, radios seemed to be the main source of the agricultural information. One user said "most of the times I find information on agriculture through radios" [US1]. Another users also echoed by saying that "mostly we do not find this [agricultural information] in the Telecentre. We find this information through radios aah yeah, radios," [US3]. Posters also acted as source of agricultural information in the community. One of the users also indicated that they find information through "posters that they paste on trees that contain information on say where we can find some particular seeds or fertilizer, they paste on trees or buildings and people access the information," [US2]. Interpersonal channels were also a means of obtaining agricultural information in the community. In this, people especially friends in the community and agricultural extension workers played a great role. One of the non-users said "I just hear from people who have been taught by those whom you call, aah, what is their name? Agricultural extension workers?...yeah. those who have been taught by the agricultural extension workers are the ones whom I get some agricultural information from. For example, on how to take care of tomatoes**," [**NU4].

The findings in this section agree with literature. According to Tumsifu and Silayo (2013), farmers rely on traditional means of communication including radios and interpersonal channels because of relevancy in the context and content.

Despite that the Telecentre was not active in providing agricultural information to the people in the community, it seems the uses of the Telecentre i.e. sending and receiving money through Airtel Money and TNM Mpamba; and photocopying and printing services to some extent helped the users in their agricultural activities. One of the users, who grows tomato indicated that the money they receive through Airtel Money and TNM Mpamba helped him in farming. He said "the money I receive [through Airtel money or TNM Mpamba] helps me in my farming activities like buying fertilizer and some pesticides" US7. Some users who used the Telecentre for printing and photocopying also indicated that this helped them in their farming activities. One of the users for example indicated that whenever he accesses agricultural information through other means like listening to the radio advert on the proper fertilizer, he writes the information down and comes to the Telecentre to photocopy such materials. The user said "whenever I have access to information on pesticides for tomatoes on radios I usually write information on a paper and come here to photocopy so I could have the information on multiple copies' US1.

Challenges that Goliati Telecentre faces in the provision of agricultural information

Observations and interviews with Telecentre Management indicated that the main challenges that the Telecentre faces include:

i. Poor Internet connectivity: the Telecentre had stayed for over four years without Internet connection;
ii. Misunderstanding of the communities: whenever there is poor network for Airtel Money and TNM Mpamba services customers are always angry especially that this means that cannot get the money at that particular time.
iii. Frequent blackouts: the Telecentre does not have alternative source of power to the one provided by Electricity Supply Cooperation of Malawi and can stay for the whole day without power.

Conclusion

The study investigated role of telecentres in the provision of agricultural information in Malawi targeting one telecentre, Goliati Telecentre. Specifically, the study examined: agricultural information needs of the communities that the telecentre serves; the types of agricultural information that the telecentre provides to the communities; and the challenges that the telecentre faces when providing agricultural information to the communities it serve. The community that Goliati Telecentre serves needs information on pest and pesticides; available markets for agricultural produce and market prices; and good agricultural practices. It can be concluded that the Telecentre is passive in providing agricultural information to the community it services as there was no information on agriculture and that people in the community it serves rely on radios, posters and interpersonal channels for agricultural information. The main challenges that Goliati Telecentre faces include poor Internet connectivity, misunderstanding of the communities whenever there is poor network for Airtel Money and TNM Mpamba and frequent power outages.

Recommendations

Based on the findings, the study recommends that Goliati Telecentre should be active in providing agricultural information; invest in alternative power supply and have Internet connectivity.

This study was limited to one telecentre. Therefore, the findings cannot be generalized. The study recommends a wider study on the same topic should be carried out.

References

Abdulhamed, H.H. (2016) 'Information needs of rural farmers in Kedah: A case study of Pusat Internet Desa (PID).' Masters thesis, Universiti Utara Malaysia. http://etd.uum.edu.my/5639/ [Accessed 2 September 201].

Association for Progressive Communication. (2010) "Peru's farmers lack information: Why are telecentres being underused?' https://www.apc.org/en/news/perus- farmers-lack- information-why-are-telecentres-being-underused. [Accessed 20th September 2017].

BB News. (2017) 'Malawi Country Profile. 11 April 2017. http://www.bbc.com/news/world- africa-13864367. [Accessed 5th August 2017].

Braun, V. & Clarke V. (2006) 'Using thematic analysis in psychology.' Qualitative Research in Psychology, 3(2) pp. 77-101.

Buhigiro, S. (2012) 'The role of telecentres in promoting socio- economic development in Rwanda.' Masters thesis. University of the Witwatersrand. http://hdl.handle.net/10539/12464. [Accessed 10 July 2017].

Chikumba, P. A. (2010) 'Utilization of ICTs in multipurpose community telecentres in rural Malawi.' In Popescu- Zeletin, R., Rai, I.A., Jonas, K. & Villafiorita, A. (Eds). E- Infrastuctures and E-Services for Developing Countries: 93-101. New York: Springer.

Dangal, M. (2011). E-Services in Rural Nepal: A study of telecenters. A Master in Public Policy and Governance Program, North South University, Bangladesh.

Hallberg, D. Kulecho, M. Kulecho, A. & Okoth L. Case studies of Kenyan digital villages with a focus on women and girls. Journal of Language, Technology & Entrepreneurship in Africa 3(1) pp. 256-273.

Kajornboon, A.B. (2005). Using interviews as research instruments. E-journal for Research Teachers, 2(1), 1-9.

Kapondera, S.K., & Hart, G. (2016). The use of multipurpose community telecentres and their services in Malawi: the case of Lupaso Community Telecentre. South African Journal of Libraries and Information Science, 82(1) pp. 13-25.

Kapondera, S.K. & Namusanya, D. M.(2017). Uses, benefits and challenges of using rural community telecentres as tools for development: the

Case of Vikwa Community Telecentre in Kasungu, Malawi. Journal of Development and Communication Studies, 5(1):1-21. https://dx.doi.org/10.4314/jdcs.v5i1.1

Mamba, M. S. N. & Isabirye, N. (2015) 'A Framework to Guide Development Through ICTs in Rural Areas in South Africa,' Information Technology for Development, 21(1) pp.135-150, DOI: 10.1080/02681102.2013.874321

Mbangala, B. & Samzugi, A. (2014). The Role of Telecentres in Tanzania's Rural Development. A Case Study of Sengerema District Council, Mwanza Region. Library Philosophy and Practice. http://digitalcommons.unl.edu/libphilprac/1224. [Accessed 10 September 2017].

Neville, K. (2012) 'Libraries, Telecenters, Cybercafes and Public Access to ICT: International Comparisons. Ed. by Ricardo Gomez. Hershey, PA: IGI Global/Information Science Reference, 2012. The Australian Library Journal, 61(4), 321-322.

Rega, I. (2010) 'What do local people think about telecentres? A key issue for sustainability.' Doctoral dissertation, Università della Svizzera italiana.

Tumsifu,E. & Silayo, E. E. (2013) 'Agricultural information needs and sources of the rural farmers in Tanzania: A case of Iringa rural district.' Library Review, 62 (8/9) pp. 547- 566, https://doi.org/10.1108/LR-01-2013-0009.

POST PROJECT ASSESSMENT OF NARO - IDRC PARTICIPATORY DEVELOPMENT COMMUNICATION INITIATIVE IN UGANDA

Nora Naiboka Odoi
Lecturer
Lecturer East African School of Library and Information Studies
Makerere University
Uganda

Abstract

Participation continues to be a catchphrase in current development jargon, but its genuineness largely depends on the power holder who is the main architect in deciding the mode of its implementation. Banana scientists from Uganda's National Agriculture Research Organisation (NARO) used participatory development communication (PDC) to share information for the improvement of natural resource and banana management in two farming communities in central and southwestern Uganda, between 2001 and 2007. The objective of the NARO – IDRC Initiative was to ascertain a two way information communication methodology that could result in small scale farmers' sustainable adoption of researched agriculture information and technologies. The researchers later reported farmers' improved livelihoods, long term utilization, adoption of disseminated information, and improved banana yields. They largely attributed the changes to the participatory mode of information dissemination in the project. But how sustainable were the changes? This report originates from a post project assessment that was carried out in 2011, four years after closure of the NARO – IDRC intervention, with the overall objective of establishing the eventual outcome of the earlier reported results. It highlights the implementation process of the NARO – IDRC intervention, reviews the status and culmination of its earlier reported changes among the farming communities, and illustrates the interaction of local factors with the process of information dissemination.

Key words: *Participation, Information Dissemination Communication, Sustainable Agriculture, food security, post project assessment*

Introduction

Banana researchers from Uganda's National Agriculture Research Organisation (NARO) with IDRC financial and technical assistance utilized participatory information sharing as an alternative information dissemination approach to address natural resource and banana management farming challenges in two farming communities located in central and south western Uganda (see Figure

1). This took place between 2001 and 2007. Before the intervention, banana farmers and researchers were challenged by effects of poor natural resource management, diseases like Banana Bacterial Wilt (BBW), and researched information that was availed to farmers but did not lead to desired results. At that time, researchers disseminated information to farmers using top down information dissemination approaches without success. Researchers indicated that farmers used to take up the disseminated information, but used it for only short periods after which they reverted to traditional but ineffective farming information and practices. The NARO – IDRC intervention availed the same researched information to the same farmers through participatory information sharing. They later reported farmers' sustained utilization of researched information leading to improved banana yields and farmers' livelihoods. The researchers suggested that the participatory mode of information sharing contributed to the positive impacts of the intervention. But how sustainable were those impacts? This report presents an assessment that was carried out in 2011, four years after the NARO – IDRC intervention. The overall objective of the assessment was to establish the long term outcome of the reported changes, to find out if they still existed.

Background

This presents the setting, theoretical context, literature review, and the NARO-IDRC intervention's methodology.

The setting

Uganda is an agricultural country in which agriculture provides food, market and raw materials for industries. The majority of Uganda's population (86%) lives in rural areas where the agriculture sector employs 77% of the active labour force, and 96% of the population below the poverty line lives. Percentage of GDP generated from agricultural activities by 2000 was 42.5%. According to the Ministry of Finance, Planning and Economic Development (MFPED, 2004) Agriculture is of high priority because agricultural growth is critical to poverty reduction and rural development in Uganda.

Leliveld et al., (2013) point out that Ugandan agriculture is largely rain – fed, and is basically small holder agriculture in which low cost inputs and traditional labour intensive farming techniques are applied. There is inadequate investment by private and public sectors, rudimentary technology based on hand hoe, low yielding seeds, poor land utilization, unreliable marketing systems, and high pre and post harvest losses. Most rural families live in isolation on small farm plots. NARO (2001) states that small scale farmers are generally cautious in adopting new technologies without proven tangible results. The State of Environment Report for Uganda (2008) indicates that due to small scale farmers' poverty, they can hardly implement recommended agricultural practices that require financial input.

The above partly explains the reported small scale farmers' non utilization of agricultural technologies. Katungi (2007) asserts that farmers' adoption rate of scientific technologies stands at 30%. This meager picture is not very different from that of Leliveld et al., (2013) which reports that adoption rates of new technologies among Ugandan farmers are generally low, except for maize (50.1%), ground nuts (20.4%), beans (12.1%), and cassava (9.4%). According to UNIFFE (2002), Uganda's search for an agricultural information dissemination strategy dates back to colonial times, but despite some success in Uganda government's efforts, poverty continues to be a major political, social and economic constraint.

Theoretical context

Over the years, information dissemination during the implementation of development initiatives has tended to mirror global views of development communication. According to Waisbord (2001) there are two core development communication approaches. Those under the dominant paradigm which argue that the problem of underdevelopment is lack of information that could be solved through top-down one-way mode of information dissemination, and the critics of the dominant paradigm for example Freire (1976), who contends that under development is caused by power inequality and consequently promote participatory communication approaches.

Whereas communication and information theories under the dominant paradigm advocate for provision of information from a sender to a receiver in linear unidirectional manner, those under the participatory paradigm advocate for horizontal and bottom-up information sharing. The modernization, top-down approach to development also known as the dominant paradigm, has been criticized as being ethnocentric (conviction of one's cultural superiority) and paternalistic (telling people what is best).

According to Nkosi and Boon (2009), Development Communication models can be divided into the following five broad categories: Information – dissemination models, these mainly use mass media to persuade and to transmit information; Innovation – dissemination models, these aim at promoting the practice of standard techniques, these models involve transmission of information to farmers by a resource person; Grassroots awareness raising models, these promote a search for ways to take control of the mass media by the most disadvantaged in the communication process; Development support communication models, these were developed by FAO, they are very interactive and participatory, they aim at supporting a specified development programme;

Participatory models, these aim at facilitating communities to take part in the entire development process.

Black (2009) in a review of extension methodologies indicated that no one single approach, methodology or model may address all that is needed from an information dissemination strategy. Black explains that whereas linear top down models have been criticized, they avail reliable scientific and professional information to farmers, while bottom up participatory approaches mobilize farmers to take part in development processes, and new ICTs provide avenues for informing, educating and training farmers. Each of them cannot work singly; it needs to be supplemented by the other information sharing avenues.

Before NARO – IDRC intervention, banana scientists in Uganda utilized top down development communication models for information dissemination, but they did not achieve desired objectives. Participatory communication facilitated researchers to achieve the desired objectives. But there was still need to establish the longevity and sustainability of the achieved desired changes.

Literature review

The review highlights government's efforts to improve Uganda's inadequate agricultural information dissemination (extension) scenario, the ongoing search for an appropriate approach through which to share information between technocrats and small scale farmers, which gap the NARO – IDRC intervention also investigated, and illustrates the interaction of information dissemination process with factors in a local context.

According to Uganda National Farmers' Federation, UNIFFE (2002) Uganda's search for an extension strategy dates back to colonial times. In the 1950s until Uganda's independence in 1962, British Colonial Office policy encouraged the development of co-operatives. This was for the purpose of facilitating subsistence farmers to partially change to selling their crops which were principally coffee, cotton, tobacco, and maize. Uganda Cooperatives Alliance (UCA) was formed in 1961 by cooperatives unions to act as the apex body of the cooperative movement in Uganda. As one of its development activities, UCA promoted information and technology transfer with the objective of raising productivity and income of small scale producers. Cooperatives ably availed agricultural related services to farmers till the mid - 1980s when the majority of the cooperatives failed due to political instability, liberalization of markets, and mismanagement. A few cooperatives survived. Currently, there are attempts to revive cooperatives in Uganda.

Semana (2010) reports that agricultural information dissemination in Uganda has gone through various phases since colonial times. Between 1898 – 1907, there was importation of cash crops like coffee, cotton, rubber and tobacco. In addition, there was establishment of research stations to carry out agriculture and forestry. 1920 – 1956, extension was effected through chiefs. At that time, emphasis was put upon the distribution of planting materials and the dissemination of simple messages on how to plant those crops. It was coercive extension rather than educative.

From 1956 to 1963, agricultural information dissemination took place through progressive farmers; up till 1971, there was duplication, and confusion as agricultural services mushroomed in parallel ministries and organizations. Between1964 – 1972, farmers were assisted through education; 1972 – 1980 was a dormant and non-directional extension phase during which the lack of an agricultural extension policy led to disorganization of extension services, accompanied with low productivity. 1981 to 1991 was a recovery period; there was rehabilitation of the infrastructure and restoration of basic services.

After 1991, the government of Uganda attempted to correct the extension services' duplication by uniting them. The unifying attempt was characterized with merging the Ministry of Agriculture and the Ministry of Animal industry and Fisheries into what is now called the Ministry of Agriculture Animal Industry and Fisheries (MAAIF), with a single chain command. The agriculture extension worker from MAAIF was responsible for teaching and advising farmers. There was farmer oriented programme planning, bimonthly training workshops and supervised farmer training and visits (T&V). Between 1992 and 1997 there was farmer education amidst radical reforms, decentralization, liberalization, privatization, restructuring and retrenchment in a bid to downsize the extension workforce. This resulted in low morale of extension staff. The situation was aggravated by the lack of capacity in the district(s) to manage extension services.

Since early 1980s Sub Saharan Africa has been subjected to structural adjustment programmes meant to reorient African economies to the market. In the Agriculture sector, the reforms are aimed at liberalizing market factors, removing tariff and non – tariff barriers, and removing export taxes. Institutional changes are ongoing for example privatization of government enterprises and handing over responsibilities to the private sector. In Uganda, one of the initiatives undertaken by the private sector was to dissolve the agricultural extension directorate of MAAIF and to hand over the duty of agricultural advisory services provision, to local governments.

Some of the structural adjustment programmes in Uganda are the Poverty Eradication Action Plan (PEAP), Plan for Modernisation of Agriculture (PMA), and the National Agricultural Advisory Services (NAADS). The PEAP, a long-term strategy that provides a comprehensive framework for national planning and multi sector engagement, was established on the following four pillars;

creating a framework for economic growth and transformation; ensuring good governance and security; increasing the ability of the poor to raise their incomes; and improving the quality of living of the poor. Agriculture lies within the pillar that underlines the fact that most Ugandans are self-employed, mainly in the agriculture sector, and the need for both higher agricultural growth rates, and non - farm employment in rural areas to attain sustainable poverty reduction.

The Plan for Modernisation of Agriculture (PMA) was conceived in 2000, as a multi - sector strategy aimed at eradicating poverty through a profitable, competitive and sustainable and dynamic agricultural and agro – industrial sector. MAAIF (2000) indicates that PMA specifically addresses factors that undermine agricultural productivity namely; poor husbandry; low use of improved inputs; limited access to technical information and advice; poor access to credit; poor transport; communication and marketing infrastructures; and insecure land tenure and user rights. PMA indicates that agricultural research should be farmer oriented and farmer driven, and that private sector funding should be increased for it. The PMA has seven priority pillars one of which is the National Agriculture Advisory Services (NAADS). PMA recommended that the government should formulate an extension policy that will be efficient and be private sector based, and that government should increase its annual spending on extension services to poor farmers.

According to Kavuma (2001) the National Agriculture Advisory Services (NAADS) is a Uganda government agency that was created in 2001 with the aim of improving rural livelihoods by increasing agricultural productivity and profitability. NAADS aims at being an efficient, effective and sustainable agriculture advisory service, responsive to farmers’ needs, and owned by all stakeholders. It aims at engaging farmers into critical thinking regarding their agricultural endeavours, and the management of farms as a business rather than simply delivering information and inputs for their own sake. The underlying principle of NAADS was to be responsive to the needs and demands as identified by farmers themselves who then determine the work programmes and activities of advisors, that is, from service driven extension, to demand driven extension services.

Friis – Hansen (2005) asserts that whereas advisory and information services for farmers are some of the key components of NAADS, technology generation, enterprise development and market linkages are NAADS key outputs aimed at eradicating rural poverty in Uganda. According to NAADS (2011) the Executive Director of NAADS Secretariat explained that NAADS is often challenged by the rapid succession of policies. Kavuma (2010) maintains that NAADS has been dogged by alleged shortcomings such as slow spreading as it targets few individuals instead of whole villages, classroom training approach, only benefiting wealthier farmers, and there being no difference in agricultural performance between NAADS farmers, and other farmers. This lack of difference among farmers was attributed to NAADS farmers not implementing NAADS scientific recommendations.

Various ventures have been implemented to bring together farmers and to facilitate their coordination and dialogue with government. The Uganda National Farmers' Association (UNFA) was thus formed in 1992, with support from the Danish Cooperation (DANIDA). UNFA's intended objective was to empower farmers to mobilize, and train fellow farmers, and help them access technological and other services, on a needs based and participatory scheme. UNFA, sometimes together with agriculture related organizations, provides services to its members for example agricultural advisory services, training and capacity building. Due to failure of the T&V programme, the government of Uganda supported UNFA's demand driven/cost recovery agricultural advisory service. UNFA has branches in most of the districts in Uganda. In order to be open to more organisations, UNFA adopted a federative scheme, becoming Uganda National Farmers' Federation (UNIFFE) in 2002. Prior to evolution of UNFA to UNIFFE, farmers' discussions had indicated a need for an umbrella organization that facilitated farmers to speak with one voice. Questions about UNFA's leadership and capabilities led to putting in place, the Agriculture Council of Uganda (ACU), in 2000. ACU is the Apex of all agricultural commodity oriented organizations.

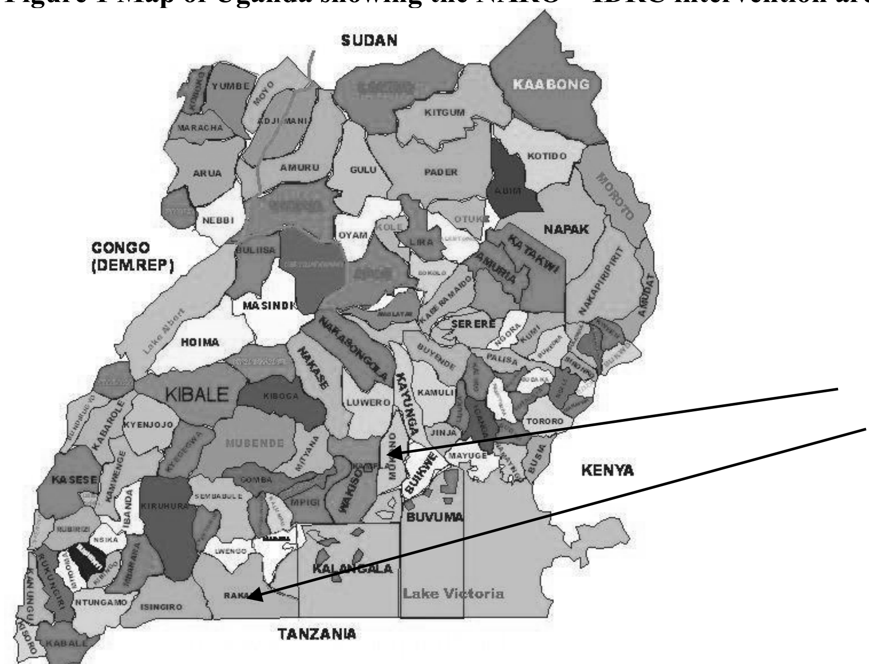
There are many farmer organizations with varying degrees in their participatory nature, representativeness and linkage to local communities. Some of them are visible at national levels, but questionable regarding support to the farmers they represent. Others have a dense network of farmer organizations and have real potential to reach grassroots communities. This differing situation among farmer organizations has been acknowledged at national level, but action to address the disparity is lacking.

Donors, policy makers, researchers, extension workers, NGOs, opinion leaders, community institutions and farmers, aim at alleviating constraints that tend to hinder farmers from accessing improved living conditions. The different sectors strive to facilitate farmers with an enabling environment by for example providing favourable policies, market access, appropriate technologies, information, and infrastructure. But according to Mango (2008) MAAIF lacks a comprehensive strategy for regulating and harmonizing agricultural information and communication provided by the variety of sector stakeholders in the country. Consequently, there is need to identify a strategy that fosters collaboration among implementing agencies whilst addressing farmers' agricultural information needs. Bearing similar intentions, NARO – IDRC intervention searched for an alternative mode of information dissemination having potential to achieve sustainable agriculture and food security among banana farming communities.

Methodology of the NARO – IDRC intervention

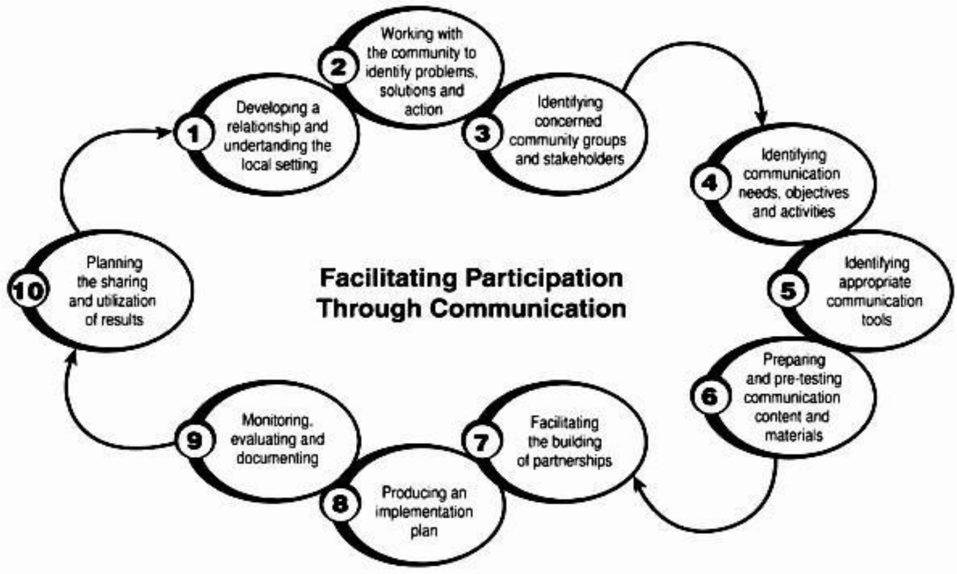
The intervention adopted a descriptive research design. It was carried out in two areas located in central and south western Uganda (Kimenyedde and Ddwaniro) respectively.

Figure 1 Map of Uganda showing the NARO – IDRC intervention areas



Study respondents were 120 small scale banana farmers. They were purposively identified as follows. In each of the two study areas, twelve farmer – groups chose five representatives forming sixty farmers, who together formed one PDC group. They worked on banana management challenges with the researchers, in line with the participatory development communication model indicated in Figure 2 below.

Figure 2: The Participatory Development Communication Model



Source: Guy Bessette (2004)

Final evaluation of the NARO – IDRC intervention in 2007 reported continued utilization of disseminated information leading to both improved banana yields, and farmers' livelihoods.

Post project assessment of NARO – IDRC intervention

Van Wicklin *et al.* (2000) in an FAO evaluative review pointed out the paucity of post project studies of long term effects of participatory initiatives and the difficulty of such would be post evaluation studies since they need in depth analyses of what happens in communities after project support has stopped.

Allahyari (2009) quoting Rao and Rogers, 2006 defines sustainable agriculture as a practice that meets current and long-term needs for food, fiber, and other related needs of society while maximizing net benefits through conservation of resources to maintain other ecosystem services and functions, and long-term human development. Allahyari asserts that sustainable agriculture is a knowledge- intensive system that demands a change from conventional agricultural information dissemination (extension) methodology which cannot achieve sustainable agriculture.

Madukwe (2006) states that failure of extension methodologies to effect sustainable agricultural growth is such a concern to stakeholders including donors that new initiatives are being mooted to enhance the generation, dissemination and use of agricultural information and technologies. Abubakar et.al (2009) aver that effective communication of new resource findings and technologies in agricultural information dissemination to rural farmers, remains a promising strategy for increasing agricultural productivity.

The problem

Many development initiatives like the NARO – IDRC intervention of 2001 – 2007, report positive results at their closure. However, it is rare that project areas are re – visited to establish the outcome of the positive results that were reported at the end of the project, and to determine if those results still existed. This means that there is loss of potentially useful information about eventual outcome of disseminated information for use by future similar interventions. There is need to revisit a project site later after its closure to establish existing continued changes if any associated with project activities**.**

Research questions

i. What information did farmers obtain from the NARO – IDRC intervention and what were the results of farmers' utilization of that information?
ii. What information obtained from the NARO – IDRC intervention, were farmers still utilizing four years after closure of the intervention?
iii. What changes associated with the NARO – IDRC intervention, still existed among the study communities?
iv. What other related changes occurred in the study communities after closure of the NARO - IDRC intervention?
v. Did the NARO – IDRC intervention contribute to sustainable development, and food security?

Methodology of the NARO – IDRC post - project assessment

The post project assessment was executed in 2011, in the same study areas where NARO – IDRC intervention was implemented (see figure 1). It utilized a social survey descriptive research design. Study respondents were purposively identified. They were the same 120 small scale farmers who took part in the NARO – IDRC intervention. Triangulation of quantitative and qualitative data collection methods, that employed focus group discussions, key informant interviews, farm observations, and structured questionnaires bearing both open ended and closed questions, validated respondents' responses and reduced bias (see appendix I, II, III, IV). Research instruments sought for information in answer to the research questions in 3.2 above. Qualitative data was analysed progressively while taking note of key statements from respondents; quantitative data was analysed using Excel, Epidata and SPSS**.**

Findings and discussion
These are presented in answer to the research questions in 3.2 above. In each section, findings are presented first, followed by a discussion, and finally, implications for future information dissemination interventions.

Information acquired, utilized and results of utilization

Majority of farmers, 119 (99.2%) said they obtained and utilized new agricultural information from researchers. The new information was about several issues like, banana and natural resource management specifically, on construction of soil erosion trenches (see pictorial in the appendix), manufacturing and application of organic manure (mulching) and removal of male buds from banana fruits (debudding), for BBW control.

Farmers were still realizing relatively good banana yields (see pictorial in the appendix: a woman showing off a good banana bunch), with improved incomes, and improved living and health standards. Farmers had become model farmers. Farmers from other areas still visited them to practically learn from their continued well managed banana gardens.

From the semi structured questionnaires (see appendix IV) the majority of farmers 108 (90%) concurred saying,

> *Utilising the information acquired from the PDC initiatives contributed to an increase in banana yields. NARO researchers woke us farmers up. They gave us real information instead of the former situation when we believed that the BBW disease was due to witchcrafts, or that it was brought into our area by government.*

This means that farmers continued using information from the intervention because they realized that it was genuine. It was different from the information they were getting prior to the NARO – IDRC intervention. Consequently, only proven trusted information and technologies should be disseminated. NARO (2001) supports this assertion in its statement that, 'small scale farmers are generally cautious in adopting new technologies without proven tangible results'.

Information from the intervention which farmers were still utilizing four years after its closure

Majority of farmers, 119 (99.2%) said that they were still using the banana management information they obtained from the PDC initiatives. In Kimenyedde, 100% farmers' gardens illustrated continued use of BBW control information. This was exhibited by farmers' cutting off male buds from banana fruits (see Appendix IV). In Ddwaniro, all the seven gardens (100%) visited illustrated that farmers were still constructing soil erosion trenches. The chairman of Ddwaniro farmers was still implementing all the technologies he learned during the PDC initiatives, that is, mulching, digging soil erosion trenches and planting shrubs to curb soil erosion in his banana garden, in exactly the same way that the NARO researchers had recommended.

One woman farmer in Ddwaniro who was still utilizing the information and implementing the technologies acquired from the NARO – IDRC intervention said,

> *I have just bought all this grass to mulch my garden. It is expensive, it costs one hundred Uganda Shillings 100,000/= (about USD 40) per lorry. I need about ten lorry - fulls for the entire garden. I got the money for the grass, from selling some of the bananas from my garden.*

Despite the grass for mulch being expensive, the woman farmer got the money for purchasing it through selling bananas from her banana garden. This means that farmers were still implementing technologies they learned during the NARO – IDRC intervention because they had proved that the technologies were beneficial. Improved banana yields in turn improved farmers' income generating capacities. This in turn made it possible for farmers to utilize recommended scientifically proven technologies. The State of Environment Report for Uganda (2008) supports this assertion when it indicates that due to small scale farmers' poverty, they can hardly implement recommended agricultural practices that require financial input. Future agricultural information dissemination ventures should take into consideration farmers' income generating capacities. They should desist from introducing technologies that are too expensive for small scale farmers.

Farmer to farmer information sharing forum

Through the NARO – IDRC intervention, farmers acquired farmer to farmer information sharing forums and information sharing skills which they were still utilizing. They had gained confidence, become creative, innovative, and competitive, all of which enhanced their potential for survival. The District authorities in the areas of intervention advised all development actors to make use of participatory information sharing in their interventions, which was supportive of 'the search for a strategy that fosters collaboration among implementing agencies whilst addressing farmers' agricultural information needs' (see last paragraph in section 2.3 above)

Farmers successfully wrote and won a Makerere University based I@Mak research award for training fellow farmers in best farming practices. With some of the money they obtained, they started a farmers' money saving fund. They started selling bananas at local and international level, as a community group.

They gained friendship and fame through farmer to farmer information sharing. Farmers' spirit of voluntarism flourished, they no longer demanded to receive financial compensation for participation in community development work. This attracted several other development agencies who found them easier to work with compared to other farmers. This is evidence illustrating PDC potential to facilitate farmers who took part in its programme, to go beyond planned project objectives and achievements.

Men farmers and their women

Male farmers had become gender alert**.** This was a change from their original behavior when they refused their women from taking part in trainings organized by male extension workers. Husbands allowed their womenfolk to take part in agricultural training forums and to acquire information from male extension workers (see Pictorial in appendix V: a woman farmer showing off soil erosion trench to a male extension worker). The change in the men to allow their women to receive information from male extension workers came about after they realized the usefulness of the disseminated information. Future information dissemination interventions should be alert to the gender dimensions in information dissemination and acquisition. Mangheni and Beraho (2005), support this assertion arguing that although the majority of rural farmers are agriculturally disadvantaged, women are further disadvantaged due to their socio – economic, and cultural status.

Farmer innovations

Farmers became 'Information actors'. They had learned how to develop information resources, how to take still and motion pictures using cameras, how to make posters and how to utilize them for farmer to farmer information sharing (see Pictorial in appendix V: farmer showing off brochure that PDC farmers made four years ago, but which he still consulted). One lead farmer acting as key informant in Ddwaniro said,

> *In researchers' absence, we farmers have continued to advise and supervise each other. PDC enhanced farmers' potential to improvise ways of utilizing the recommended scientific information. For example, regarding how to make organic manure, we farmers were advised to dig deep huge 6ft by 6ft by 6ft holes from where to decompose the organic materials, but some of us farmers modified this and started decomposing and manufacturing organic manure above the ground. This method also manufactured organic manure, yet it was less labour intensive.*

This means that farmers understood what worked in the technology which researchers introduced to them. They modified the technology and left out its laborious part, but maintained the important aspect. In that way, they did not reject the entire technology, only the labour intensive aspect. Information disseminators should empathize with the intended users of the disseminated information and technology. They should work with the intended users to perfect the technology before confirming the information and technology for dissemination.

Unanticipated results

Farmers acquired leadership skills. Many became leaders in their local communities at village and district level. Some including women farmers successfully campaigned for political positions. For example, one woman became the speaker of the local council (LC) of the area. One other previously shy woman became a showcase among the village and beyond through her model banana garden which earned her prizes on several occasions.

Challenges associated with the NARO – IDRC PDC intervention

With positives, came challenges**.** Farmers' success resulted into no further need for external facilitators, consequently, some of those who facilitated in the NARO – IDRC intervention for example the development communication specialist who was the lead facilitator, were rendered jobless. Researcher – farmer participation in the initiatives, led to jointly developed information resources, an emerging question was whose was the copyright? Banana farmers' good organization attracted other development actors some of who were yet to appreciate the participatory information sharing model. Future information dissemination interventions should examine and appropriately adapt the PDC model to their different contexts.

Conclusions

The overall objective of the post project assessment was to establish whether the NARO – IDRC intervention contributed to sustainable development and food security. Prolonged existence of an information dissemination project facilitates long term use of the disseminated information and its associated results. However, long term use when the information originators are still working with the beneficiary community does not illustrate sustainable development and food security. This is because the information originators are still within the community to encourage and urge the information recipients to continue utilizing the disseminated information.

The NARO – IDRC intervention occurred in two phases between 2001 and 2007, which was relatively long, but which could not confirm sustainability of results among the farmers. Proof of sustainability of results could only be implied after the closure of the intervention. Moreover, after some years during which time recipients were left on their own to decide whether to continue or discontinue utilizing the disseminated information.

Post project assessment facilitated gauging the degree of sustainability of the NARO – IDRC intervention's results. Information dissemination intervention may have nothing to show other than change in the recipient's behavior whose sustainability may be difficult to prove, except if there is a physical culmination of the behavior change that will illustrate the sustained adoption of the disseminated information. In the case of NARO - IDRC intervention, there were three physical results: sustained improvement in banana yields, sustained banana management practices of digging soil erosion trenches, mulching and cutting off the male bud from the banana fruits, and sustained utilization of participatory mode of information sharing. Farmers sustained utilizing the agricultural information they obtained four years before the assessment was carried out. They continued getting the desired objectives. All this implies a contribution from the NARO – IDRC participatory mode of information sharing.

References

Abubakar B. Z, Ango A. K., Buhari U. (2009). The roles of Mass Media in disseminating Agricultural Information to Farmers in Birnin Kebbi Local Government Area of Kebbi State: A Case study of State Fadama II Development Project. *Journal of Agriculture and Rural development in the Tropics and Subtropics, 13*(2), 42 - 54.

Allahyari, M. S. (2009). Agricultural sustainability: Implications for extension systems. *African Journal of Agricultural Research, 4*(9), 781-786.

Bessette, G. (2004). *Involving the Community: A Guide to Participatory Development Communication*: IDRC Canada.

Black,A.W.(2009). Extension Theory and Practice: a review. Retrieved 2/02/2009 from http://www.publish.csiro.au/EA99083.htm

Freire, P. (1976). *Education : the Practice of Freedom*, Writers and Readers Publishing Cooperative, London

Friis-Hansen E, C. A., and M Kidoid. (2004). Smallholder agricultural technology development in Soroti district: Synergy between NAADS and Farmer Field Schools. *Uganda Journal of Agricultural Sciences, 9*, 250 - 256.

Katungi, E. M. (2007). *Social Capital and Technology adoption on Small Farms.* University of Pretoria.

Kavuma, R. M. (2010). NAADS: Modernising Uganda's Farmers? Retrieved 20 February 2011, 2011, from http://www.guardian.co.uk/katine/2010/jan/07/naads-agriculture-programme

Leliveld A, Dietz T, Foeken D, Klaver W., (2013) Agricultural dynamics and food security trends in Uganda. Developmental Regimes in Africa (DRA) London

Madukwe, M.C (2006). *Delivery of Agricultural extension to Farmers in Developing Countries*. A Journal of Agricultural Research

Mango, A. K. (2008). Assessment of Agricultural Information needs in Africa, Carribean and the Pacific (ACP) States; Eastern Africa; Country Study: Uganda; Final Report

MFPED. (2004). *Poverty Eradication Action Plan*. Kampala.

NARO. (2001). *Agriculture in Uganda : General Information* (Vol. 1).

Nkosi&J.A.Boon, T. (2009). A Development Communication Case Study of the information use by selected micro - enterprises in rural areas of Northern Kwazulu - Natal: Department of Information Science, University of Pretoria.

Semana, A. R. (2010). Agricultural extension services at Crossroads: Present Dilemma and possible solutions for future in Uganda.

The State of Environment Report for Uganda (2008)

UNIFFE. (2002). Exploring new alliances in agricultural extension. *Leisa* Retrieved 02/07/09, from http://www.ileia.org/index.php?url=show-blob-ml.tpl&p%5Bo_id%5D=12584&p%5Ba_id%5D=211&p%5Ba_seq%5D=1

Waisbord, S. (2001). Family Tree of Theories, Methodologies, and Strategies in Development Communication: Communication Initiative.

Van Wicklin W. J.J., Oakley P., Khadka,S, Tomic T. (2000). *Participatory approaches to development in FAO: extract from programme evaluation report 1998-99.* Rome: Food and Agriculture Organization.

Appendix 1: Focus Group Discussion Guide

1. Tell me about the NARO – IDRC PDC initiative
2. What were the objectives of researchers in the initiative?
3. What were the objectives of farmers in the initiative?
4. How were the objectives of researchers and farmers addressed in the initiative?
5. What objectives were achieved?
6. Which objectives were not achieved? Why were they not achieved?
7. What new information did you get from the initiative?
8. From what you learned, what are you still putting into practice?

Appendix II: Key Informant Interview Guide

This was constructed taking into consideration emerging issues from data gathered using other research instruments.

- What do stakeholders consider to be key elements in agricultural information dissemination? Were these achieved in the PDC initiatives in Ddwaniro and Kimenyedde?
- How did researchers use PDC to address farmers' and other stakeholders' aspirations and concerns regarding agricultural information dissemination?
- Did farmers acquire new information during their participation in the PDC initiatives? To what extent are they still using the information they acquired?
- What were the benefits of PDC according to participants and non - participants?

Appendix III : Farm Observation Checklist

What is the condition of the farm?
How is the banana yield?
What banana management methods are being used on the farm?

Appendix 1V:
Structured questionnaire bearing both open ended and closed questions

1. Do you know about PDC?
Yes
No
2. Did you participate in PDC initiative either in Ddwaniro or Kimenyedde?
Yes
No
3. What do you consider to be key elements in Information Dissemination?
4. Which of the above was contained in the NARO – IDRC PDC initiative?
5. What information did researchers share with farmers during the PDC initiatives?

6. Of the information that researchers shared with farmers, which information are farmers still using?
7. Which information have farmers abandoned?
8. Why have farmers abandoned that information?
9. What were the challenges in implementing PDC for agricultural information sharing?
10. What are advantages of PDC for agricultural information sharing?

Appendix V: Pictorial

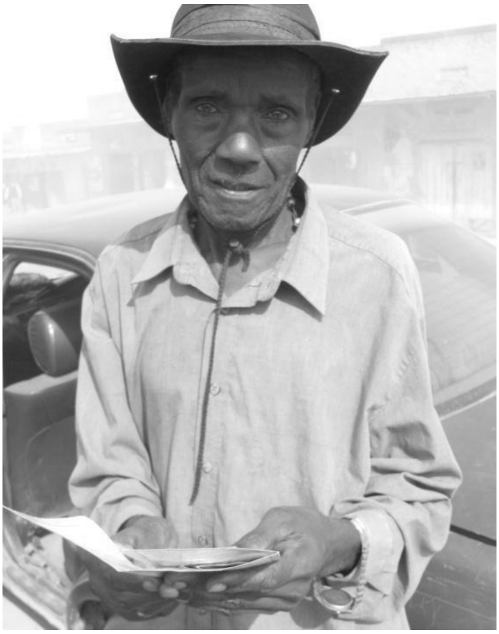
Woman mulching banana garden in Ddwaniro

Woman showing soil erosion trench to extension worker in Ddwaniro

Woman showing rejuvenated banana garden in Kimenyedde, Central Uganda

Male only Focus Group Discussion in Kimenyedde, Central Uganda

Women only Focus Group Discussion in Kimenyedde, central Uganda



Farmer in Rakai, South Western Uganda, showing off a farmer made brochure that was made four years earlier but which he still consulted

DISSEMINATING AGRICULTURAL INFORMATION SERVICES TO FARMERS FOR ATTAINING FOOD SECURITY IN ZOMBWE EXTENSION PLANNING AREAS (EPA) MZUZU AGRICULTURAL DEVELOPMENT DIVISION (MZADD) MZIMBA, MALAWI

Fiskani Ngwira
Lecturer of Library and Information Science
Mzuzu University

and
Felix Majawa
University Librarian for Mzuzu University.

Abstract

This study investigated the dissemination of agricultural information services to farmers for attaining food security. The study applied a survey research methodology. To have an in-depth understanding of the study area two methods were used in order to gather primary data and information. These included semi-structured questionnaires and personal interviews. Questionnaires were administered face to face to eighty five (85) farmers in the study area. The findings showed that farmers had information needs related to growing a variety of crops and rearing of livestock, fertilizer application methods, pesticides use, planting method and storage method among others. Findings also showed that the main sources of information were radios, posters and agricultural extension officers. The study revealed that farmers experienced challenges in accessing agricultural information due to the fact that, agricultural information on radio and television is always aired at odd hours when farmers who desire such information have gone to their farms; illiteracy level; lack of awareness of information sources and lack of extension workers. The study recommends that adequate funding should be made to libraries so that they can improve the quality of agricultural information resources; qualified librarians should be recruited within agriculture sector; librarians should identify relevant information sources suitable to farmers; libraries should provide unique attention to targeted group of information beneficiaries with a focus on their identified information needs; more extension officers should be recruited, trained and deployed in the rural areas in order to effectively cover the larger area; public and private media houses should broadcast agricultural programmes at appropriate and convenient times for farmers; the Malawi Communication Regulatory Authority (MACRA) in collaboration with the National Library Service should establish Information Centres or Telecentres in rural areas. These should be stocked with relevant and current agricultural information resources in vernacular languages to meet the needs of farmers; librarians in the country should make useful agricultural *information available, via researchers, agricultural extension officers, among others.*

Keywords: *Farmers, Food security, Agricultural information, Zombwe EPA, Malawi.*

Introduction and Background to the Study

The importance of food at the household level is obvious since it is a basic means of sustenance. Adequate intake of quality food is a key requirement for healthy and productive life. Food security means access by all people at all times to adequate food for an active healthy life (World Bank, 2001). It entails both the availability of food and the ability of all members to have access to adequate amount of food. A country can be said to be enjoying food security when people's fear of not having enough to eat is removed and the most vulnerable group, namely women and children, in the marginal areas have access to adequate quality of food they want. Household food security can therefore be defined as a household having assured sets of entitlement from food production, cash, income, reserves of food assets and/or government assistance programmes such as in times of need they will be able to maintain sufficient nutritional intake for physical well-being (Idrisa, Gwary and Shehu, 2008). Information is an indispensable factor for promoting the development of any society. It is the raw material for making decisions, for creating knowledge and fuelling the modern organization. Information dissemination has been described as a need comparable with other basic human needs. Free flow of information is a right of people which enable them to participate effectively in the process of economic, social and political activities in the society and enhance education, knowledge and learning (Echezona, 2007).

Information and knowledge are key components of an improved agricultural sector (Lwoga et al., 2011). Farmers require proper information in order to plan for their activities, make choice of the inputs and eventually on when and where to sell their products. Thus, there is a direct relationship between availability of information and agricultural development (Babu et al., 2011). To improve the economy, information needs of farmers have to be met conveniently and at an affordable cost while ensuring its timely availability. Farmers need to have access to quality information for their productivity potentials to be realized and if food security and self-sufficiency are to be achieved. Williams and Trywell quoting Adomi *et al,* (2010) recognized that, farmers need to have access to quality agricultural information in order to improve their production. Therefore, information is very important resource for all agricultural activities. Agricultural information provision and dissemination is a must for every responsible government because it is only when farmers were informed, that they will be able to take a rational decision and produce enough to feed Malawi.

Background of Zombwe Extension Planning Areas (EPA)

The landlocked country, Malawi in south central Africa ranks among the world's least developed countries. The economy of Malawi is predominantly agricultural, with about 90% of the population living in rural areas. In 2013, agriculture accounted for 27% of GDP (World Bank 2015) and about 80% of export revenue. Furthermore, the majority of the agriculture sector is made up of smallholder farmers who live of less than 2 hectares of land. The government of Malawi put agriculture at the heart of its economic development; however, the sector faces major challenges in enhancing production.

Mzimba is the largest district found in the Northern Region of Malawi. The District boarders with Zambia to the West, Kasungu to the South, Nkhatabay to the East, Nkhotakota to the South East and Rumphi to the North. The total land area of the District is estimated to be 10,430 square Kilometres. According to the NSO (2008) Census, the total population of the district was estimated at 724,873 representing 5.5% of the country's total population of 13.1 million as of 2008. Agriculture is the major economic activity, with much of the land being under subsistence farming.

The study area is located at a distance of about 8 km from the northern town of Mzuzu. This area has an all-weather road that connects it to Mzuzu city and beyond in addition to several feeder roads that are accessible throughout most of the year except on those days when it rains heavily. The area is predominantly cultivated by farmers holding land under customary land tenure that recognises private land ownership rights, inherited mainly through the patrilineal system (Ngwira, 2003). The majority of people in this area experience food shortage. The development of agriculture is important in ensuring food security.

Figure 1: A map showing the location of the study area

Malawians continue to be unacceptably vulnerable to food insecurity, and much of it attributed to the high levels of poverty in the country (Food Security Monitoring Report 2005). Despite the large body of agricultural information that exist in research institutions, universities and public offices, people in this area still experience food shortage. Therefore, this is the gap that this study seeks to investigate.

Aim of study

This study investigated the dissemination of agricultural information services to farmers for attaining food security.

Objectives of the study

The study objectives were specifically to:

- Find out the farming activities of farmers;
- To ascertain farmers' agricultural information needs in Zombwe EPA;
- To determine the sources of agricultural information;
- Identify the challenges farmers experience while seeking agricultural information.

Review of Related Studies

Information is regarded as a crucial resource and an important commodity for development. It is a basic necessity and brings success in everyday life endeavours including farming activities. Mchombu (2006) asserts that every person needs information for decision making. Information can be shared among farming stakeholders, enhances productivity and brings about agricultural development. Odini (2005) asserts that identifying information needs is the first step towards satisfying information needs and that information seeking processes involve a number of steps before identifying information sources and needed information. Lwoge and Stilwell (2011) observe that most information services in Africa including Kenya are focused on urban areas, neglecting the rural areas where the majority live. Access to information is fundamental to all aspects of agricultural development (Mchombu, (2006). The World Bank (2006) studies indicate that women are involved in various agricultural activities such as homestead, agriculture, and other horticultural activities including livestock and poultry, crop production, and processing hence the need of relevant information for them to succeed in these activities.

Information source is an institution or individual that creates or brings about a message (Statrasts, 2004). The characteristics of a good information source are timelessness, accuracy, relevance, cost effectiveness, trustworthiness, usability, exhaustiveness and aggregation level (Statrasts, 2004). The selection of an information source depends on a number of factors; including level of income, farm size, age, geographical location, level of education (Riesenberg, and Gor 1999). Using the Indian NSSO 2003 survey, Adhiguru *et al* (2009) found that small and marginal farmers accessed less information and from fewer sources than medium and large Scale farmers. Ogboma (2010), Buba (2003), Meitei and Devi (2009), and Mtega and Benard (2013), mention some information sources used by farmers in accessing their agricultural information including: newspapers, journals, bulletins, community leaders, and famer groups. Another study by Daudu *et al*. (2009) reported that farmers used agricultural extensions, posters, televisions, and radios as their source of information. Ogboma (2010) noted the sources of information used by rice farmers were personal experience, workshops and Seminars, training, friends and neighbours, Ministry of agriculture, magazines of agriculture, extension officers, local Government officers, non-Government organization, libraries of agriculture and posters. The study by Daudu *et al* 2013 in Nigeria further showed that the main sources of information used by farmers in accessing agricultural information were Extension agents, Friends, Radio and Libraries. Similary, Bozi and Ozcatalbas (2010) revealed that family members, neighbour farmers, extension services, input providers and mass media were key sources of information for Turkish farmers. Therefore, in view of the fact that each farmer prefers certain information sources or channels over others, it is important to do a thorough study before opting for an information source or channel to address their information needs.

Several challenges facing farmers in accessing agricultural information have been identified. For instance, Tologbonse *et al*. (2008) found that challenges facing farmers in accessing agricultural information were outdated information, language barrier, lack of awareness on existence of different information sources, lack of funds to acquire information and poor format of information carrier. Furthermore, the study by Daudu (2009) pointed out some of the problems encountered by farmers in Nigeria in accessing agricultural information. These include financial problems, inadequacy of facilities/professionals, incomplete or irrelevant information. Also, Byamugisha *et al.* (2008), pointed out the challenges encountered by farmers in Uganda when searching for agricultural information as lack of cooperation from fellow farmers in sharing agricultural information and language barriers. Aina, (2004) revealed that the factors affecting the flow of agricultural information to farmers in Africa include, the limited number of radios and television sets, the low literacy level of farmers, and the inadequate number of personnel trained in agricultural information. Similarly, Babu *et al.* (2011) conducted a study on farmers' information needs and search behaviours in Tamil Nadu. The findings from this study showed that the major constraints facing farmers in accessing information were poor availability, poor reliability, lack of awareness of information sources available among farmers and untimely provision of information. Furthermore, Mtega and Benard (2013) carried out the study on the state of rural information and communication services in Tanzania. The findings from the referred study show that, poor/unreliable information infrastructure, high illiteracy levels, low income, lack of electricity and high cost of ICTs have limited the accessibility of information services in rural areas.

Research Methodology

The study applied a survey research methodology. An extensive literature review was undertaken which helped in framing questions for the primary data collection. The study was conducted in three areas of Zombwe EPA, Lupaso, Luwinga and Nkholongo. Conducting research that involves human participants requires ethical approval. Permission was sought from the Head of Mzuzu Agricultural Development Division (ADD) and District Agricultural Development Officer (DADO) to conduct research in the Zombwe Extension Planning Area (EPA) who granted permission that enabled the researchers to carry out the study in this area. To have an in-depth understanding of the study area two methods were used in order to gather primary data and information. These included semi-structured questionnaires and personal interviews. Questionnaires were administered face to face to eighty five (85) farmers in the study area. A purposive sampling technique was used in order to select farmers. The returned copies of the questionnaire were analysed and interpreted, using frequency count and percentages. Given the small sample size of 85 farmers, the study cannot be generalized to the whole district.

Findings and Discussion

Gender of respondents

Eighty five (85) farmers participated in the survey questionnaire, of whom 56 (65.9%) were male and 29 (34.1%) were female. The finding is attributed to the fact that majority of men are always associated with farming in this area. Similarly, findings of Odini's (2014) revealed that women also play an important role in rural areas, despite most of them lacking resources such as information, technology, and knowledge to assist them to increase productivity in farming.

Age Ranges of Respondents

The age distribution of respondents is contained in Table 1 below, 8 (9.4%) of the respondents were in the age bracket of 18 to 25 years; 8 (9.4%) were between 26 to 35 years; 35 (41.1%) were 36 to 45 years; 20 (23.5%) were 46-55 years; 10 (17.2%) fell between 56 to 65 years and 4 (4.7%) 66 and above. Majority of the respondents 55 (64.6%) were found in the age brackets of 36 to 45 and 46 to 55 years, that is between 36 and 55 years. The result implies that most of the respondents fell within the economically active age. Age factor is significant in agricultural information accessibility and utilization. Young people (farmers) are more responsive to new ideas and practices while older ones are conservative and less responsive to adoption of new ideas and practices. Adeogun *et al.,* (2010) had opined that, the younger farmers would most likely be willing to spend more time to obtain information on improved technologies compared to the old farmers.

Table 1: Age ranges of respondents (N=85)

Age range in years	Frequency (f)	Percentage (%)
18-25	8	9.4
26-35	8	9.4
36-45	35	41.1
46-55	20	23.5
56-65	10	17.2
66 and above	4	4.7
Total	85	100

Education Level

With regard to their educational status as depicted in Table 2 below, 61 (71.8%) of the respondents claim to have studied up to primary school level. While 22 (25.9%) of the respondents reported to have reached secondary school level education and 2 (2.4%) of respondents indicated to have attained tertiary level education. This implies that majority of the farmers had attained primary level education. Their level of education affects information accessibility, comprehension and adoption of new agricultural innovations and practices. This concurs with the findings of Benard (2014) which indicated that good educated farmers can easily access information from various sources, and can be able to create knowledge out of those sources.

Table 2: Level of education of respondents (N=85)

Level of education	Frequency (f)	Percentage (%)
Never been to school	0	0
Primary education	61	71.8
Secondary education	22	25.9
Tertiary education	2	2.4

Types of farming activities

The findings in Table 3 below indicated that majority famers 68 (80%) grow maize, 56 (67%) grow beans, 32 (38 %) grow maize and beans, 31 (36%) grow sweet potatoes, 24 (28%) ground nuts. It is also apparent that 20 (20%) grow bananas, 16 (18%) soya beans, 10 (18%) sugar canes, 8 (%) cassava while 4 (5%) Irish potatoes. This reflects the findings of Minot (2010) who reported that maize is by far the most important food staple in Malawi. "Maize is life" a famous Malawian saying shows the importance of maize in Malawi (Derlagen, 2012). In addition cassava and sweet potatoes are also important staple food crops in Malawi.

The findings in Table 4 below indicated that majority famers 62 (73%) rear local chickens, 56 (66%) rear goats, 27 (32%) rear doves, 18 (21%) rear cattle, 14 (16%) rear broilers while 8 (9%) rear pigs. This finding substantiates that of Gondwe et al (1999), who reported that more than 80 percent of the national poultry population is kept in rural areas. Chickens constitute the majority (83 percent), followed by pigeons (14 percent) and ducks (2 percent).

Table 3: Types of Crops Grown (N=85)

Crops	Frequency (f)	Percentage (%)
Maize	68	80
Beans	56	67
Mixed maize and beans	32	38
Sweet potatoes	31	36
Ground nuts	24	28
Bananas	20	23
Soya beans	16	18
Sugar canes	10	18
Cassava	8	9
Irish potatoes	4	5

Table 4: Types of Livestock reared (N=85)

Livestock	Frequency (f)	Percentage (%)
Local Chickens	62	73
Goats	56	66
Doves	27	32
Cattle	18	21
Broilers	14	16
Layers	11	13
Pigs	8	9
Guinea fowl	5	5
Ducks	3	4
Rabbits	2	2

The Farmers' Information Needs

Data in Table 5 below reveal that out of the 85 respondents regardless of the level of education, 77 (90.5%) use information related to fertilizer application methods, pesticides use 55 (64.7%), planting method 62 (72.9%) and storage method 51 (60%). This concurs with the key findings of Elly (2013), which indicated that "farmers need information related to disease outbreak, animal husbandry, new breeds, input availability and training on new varieties, breed and farming techniques. Furthermore, they require information on pest management, soil fertility and suitability, crop husbandry and weather".

When probed further to indicate other types of information they need apart from those provided from the checklist, farmers indicated that "*we want information on markets for our farm produces, seed and fertilizer subsidies and credit facilities*". The findings are in agreement with findings from Benard (2014) which show that majority of the farmers need information on marketing, weather condition, and agricultural credit/loans among others. These findings are slightly similar to the observation made by Elly (2013), where farmers are increasingly looking for information on where to get financial assistance and credit facilities and subsidies.

Based on the observations in all the three areas under study, it can be concluded that their main information needs were directly related to issues that affect their well-being. Similar observations were made by other studies on information needs in developing countries (Lwoga,Ngulube and Stilwell 2010; Matovelo, Msuya and de Smet 2006; Lesaoana-Tshabalala 2003; Meitei and Devi 2009; Garforth 2001). Lesaoana-Tshabalala (2003) and Meitei and Devi (2009) found that farmers' information needs were specific, and they varied from farmer to farmer, and from location to location. It is thus imperative for information providers to consider each target community as a unique group; hence the importance of assessing information needs before disseminating information. Thus assessment of the information needs of rural farmers is crucial to effectively satisfy the felt information needs and developing demand-led information dissemination systems (Rees et al. 2000; Garforth 2001).

Table 5: The farmers' information needs (N=85)

Information needed by farmers	Frequency (f)	Percentage (%)
Fertilizer application	77	90.5
Pesticides use	55	64.7
Crop rotation practices	12	14.1
Land preparation	24	28.2
Seed selection	28	32.9
Crop disease treatment and control	14	16.4
Livestock disease treatment control	13	15.2
Storage methods	51	60
Information on irrigation	18	21.1
Planting methods	62	72.9

Sources of agricultural information

In order to meet their information needs, farmers use various information sources. Table 6 below presents the research findings that the main sources were radios 78 (91.7%), posters 67 (78.8%), agricultural extension officers 52 (61.1%). This finding is almost in agreement with that of Obesie (2016), who found that radio was the major source of agricultural information. The findings from an evaluation of 15 participatory radio campaigns under AFRRI-I (including three from Malawi), showed that a PRC model is an effective way of informing and engaging smallholder farmers with the potential to quadruple the adoption rates of agricultural improvements (FRI, 2011).

The least used sources of information were television 21 (24.7%), mobile phones 33 (38.8%), fellow farmers 28 (32.9%), SMS 16 (18.8%), village leaders 8 (9.4%). It is evident that twitter, blogs, e-mail, newsletters, farmers clubs, demonstration plots, telecentres and community libraries were not used. Despite the fact that telecentres and community libraries were not used, libraries can play a vital role in enhancing agricultural productivity in Malawi. This concurs with Forsyth (2005) who observed that librarians can use libraries as an instrument to help eradicate extreme poverty and hunger by raising awareness and creating an enabling environment where information on sustainable agricultural practices in all its form and format can be found and use. Similarly, in their study in Bangladesh, Islam and Hasan (2009) observe that information centres and telecentres have been established in rural areas in order to provide information to farmers in order to improve food production. Studies by Dulle et al. (2001) and Rhoe, Oboh and Shelton (2010) revealed that libraries are not meeting agricultural information needs of farmers in rural area because of poor funding which affects their capacities to expand. Mangstl, in Rhoe, Oboh and Shelton (2010), posits that lack of qualified librarians to staff libraries within agricultural sector compromises the quality of service delivery.

Similarly, Indrani et al (2015) reported that Indian farmers use social network in agricultural knowledge management. Unlike India, not much work has been done in China about using ICTs to capture and share agricultural knowledge at a large scale. Presumably this is at least partially due to Chinese farmers' perceived lack of value in the use of ICTs for agricultural knowledge (Elisa 2013). The findings of Semeon et al. (2013) concluded that agricultural knowledge is transferred by using different technologies including Websites, CD ROM, E-mail, Cell Phone, farmer groups and producer associations through face to face contact, community radio, handouts, TV etc.

It is evident from the findings that farmers also relied on interpersonal and informal sources of information such as fellow farmers and village leaders. One farmer had this to say:

> *"My role is to help and encourage my fellow farmers how we can improve our families, our community and Malawi as a nation. I share knowledge with them. I grow maize, cotton and pigeon pea, as well as horticulture products. This is important because we share knowledge so that we all have enough food in our household."*

The findings are supported by Aina (200) who asserts that ''when the need for information is for problem solving, the user approaches informal sources such as colleagues, friends, neighbours, family, chiefs, a religious body, the neighbourhood or a professional association''. The farmers' dependence on interpersonal sources of information could be attributed to their availability, accessibility, reliability and trustworthiness (Savolainen 2008). The heavy reliance on family, friends and neighbours for information is worrying, since these information providers themselves are dependent on the same sources. A similar trend was observed in related studies (Achugbue and Anie 2011; Okwu and Daudu 2011). The situation may be attributed to easy accessibility of the colleagues, relatives and neighbours, coupled with inadequate numbers of extension officers in the rural areas. This calls for the government to deploy more extension officers in the rural areas to improve farmers' access to reliable sources of information.

The findings of Sokoya, Onifade and Alabi (2012), observed that interpersonal connectivity between farmers and agricultural extension agents will enhance farmers' knowledge and awareness of current trend in farming that will boost stages of farming and abundance food supply.

Table 6: Sources of Agricultural Information (N=85)

Sources of Information used by farmers	Frequency (f)	Percentage (%)
Radio	78	91.7
Poster	67	78.8
Agriculture extension officers	52	61.1
Mobile phones	33	38.8
Television	21	24.7
Fellow farmers	28	32.9
Village leaders	8	9.4
SMS	16	18.8
twitter	0	0
Blogs	0	0
e-mails	0	0
Newsletters	0	0
Farmers clubs	0	0
Demonstration plots	0	0
Telecentres	0	0
Community libraries	0	0

Challenges Farmers Experience while Seeking Information

Table 7 below presents the research findings of challenges farmers experience while accessing agricultural information. These include: agricultural information on radio and television is always aired at odd hours when farmers who desire such information have gone to their farms, illiteracy level, lack of awareness of information sources, lack of access roads for easy community visit of extension workers, lack of extension workers, and lack of telecentres among others. Similar findings were made by other studies on information needs in developing countries (Odini 2014; Lwoga 2010; Mtega 2012; Sife, Kiondo & Lyimo-Macha 2010; Babu 2011; Shetto 2008; Chapota 2009; Aina 2007) found that existing information sources and systems that provided rural women with information were constrained by a number of factors. These include: illiteracy, ignorance of information sources, language barrier, widespread poverty, lack of time to access information, and unreliable information, inadequate financial power of farmers, illiteracy; majority of them cannot read or write in any language, farmers in Africa live in areas where there is lack of basic infrastructure, such as telephone, electricity, good road network, pipe borne water etc., few number of extension workers (the ratio of agricultural extension workers to farmers is low) and poor radio and television reception signals in most village communities in Africa.

Table 7: Challenges farmers experience while seeking information (N=85)

Challenges	*f*	%
Illiteracy level	58	68.2
Poor radio and television signals	15	17.6
Agricultural information on radio and television is always aired at odd hours when farmers who desire such information have gone to their farms.	74	87
Lack of awareness of information sources	54	63.5
Lack of access roads for easy community visit of extension workers	24	28.2
Agricultural information is not broadcast on radio and television	18	21.1
Inadequate number of extension officers	66	77.6
Lack of demonstration plots	50	58.8
Lack of Telecentres	47	55.2
Limited ICT infrastructure	15	17.6

Conclusion and Recommendations

The findings showed that farmers had information needs related to growing a variety of crops and rearing of livestock, fertilizer application methods, pesticides use, planting method and storage method among others. It also showed that the main sources of information were radio, posters and agricultural extension officers. Other equally important sources of information like television, mobile phones, fellow farmers, SMS, village leaders were not adequately utilized. Farmers in this area are still backward when it comes to use of social media such as twitter, blogs, e-mail, newsletters. The study revealed that farmers experienced challenges in accessing agricultural information due to the fact that radio and television programs are always aired at odd hours when farmers who desire such information have gone to their farms, illiteracy level, lack of awareness of information sources, lack of access roads for easy community visit of extension workers, lack of extension workers, and lack of telecentres and community libraries among others. The study recommends the following:

- Adequate funding should be made to libraries so that they can improve the quality of agricultural information resources.
- Qualified librarians should be recruited within agriculture sector.
- Librarians should identify relevant information sources suitable to farmers.
- Libraries should provide unique attention to targeted group of information beneficiaries with a focus on their identified information needs.
- More extension officers should be recruited, trained and deployed in the rural areas in order to effectively cover the larger area.
- Public and private media houses should broadcast agricultural programmes at appropriate and convenient times for farmers.
- The Malawi Communication Regulatory Authority (MACRA) in collaboration with the National Library Service should establish Information Centres or Telecentres in rural areas. These should be stocked with relevant and current agricultural information resources in vernacular languages to meet the needs of farmers.
- Librarians in the country should make useful agricultural information available, via researchers, agricultural extension officers.

Reference

Adeogun, S.O., Olawoye, J.E. and Akinbile, L.A. (2010). Information sources to cocoa farmers on cocoa rehabilitation techniques (CRTs) in selected states of Nigeria.*Journal Media and communication studies*, 2(1), 009-015, Available at http://academicjournals.org/article/article1380093281_Adeogun%20et%20al.pdf

Adhiguru, P. Birthal, P.S. and Kumar, B.G (2009). Strengthen pluralistic agricultural
information delivery systems in India, *Agricultural Economics Research Reviews*,

22,71-79. Available at http://ageconsearch.umn.edu/bitstream/57382/2/5-PAdhiguru.pdf

Aina LO (2004) Towards improving information access by semi and non-literate groups in Africa: A need for empirical studies of their information-seeking and retrieval patterns. In Bothma TJD and Kaniki A (eds). ProLISSA 2004: Proceedings of the 3rd Biennial DISSAnet Conference. Pretoria: Infuse, pp. 11–20.

Aina, L.O. (2007). Globalisation and Small- Scale Farming in Africa: What role for Information Centres? World libraries and information congress 73rd IFLA General conference and council. Durban, South Africa.

Babu, S.C., Glendenning, C.J., Asenso-Okyere, K. and Govindarajan, S.K. (2011), Farmers' Information Needs and Search Behaviors: Case Study in Tamil Nadu, India, Report for International Food Policy Research Institute, Washington, DC.

Bozi, I. and Ozcatalbas, O (2010). Determining information sources used by crop producers: A case study of Gaziantep province in Turkey, *African Journal of Agricultural Research,* 5 (10), 980-987. Available at http://www.academicjournals .org/ajar/PDF/pdf%202010/18%20May/Boz%20and%20Ozcatalbas.pdf

Benard, R., Dulle, F and Ngalapa, H., (2014). Assessment of information needs of rice farmers inTanzania; A case study of Kilombero District, Morogoro. *Library Philosophy and Practice (e-journal)*

Byamugisha, H.M. Ikoja-Odongo, R. Nasinyama, G.W. and Lwasa, S (2008). Information seeking and use among urban farmers in Kampala district, Uganda, *Agricultural information and IT proceedings of IAALD AFITA. 24 to 27August 2008*, Tokyo University, Japan.

Chapota, R, Fatch, P & Mthinda, C. (2014). The Role of Radio in Agricultural Extension and Advisory Services: Experiences and Lessons from Farm Radio Programming in Malawi MEAS.

Daudu, S. Chado, S.S. and Igbashal, A. A. (2009), Agricultural information sources utilized by farmers in Benue state, Nigeria, *Publication Agriculture and Technology*, 5 (1), 39-48. Available at http://patnsukjournal.net/Vol5No1/p5.pdf

Daudu, S. Chado, S.S. and Igbashal, A. A. (2009), Agricultural information sources utilized by farmers in Benue state, Nigeria, *Publication Agriculture and Technology*, 5 (1), 39-48. Available at http://patnsukjournal.net/Vol5No1/p5.pdf

Derlagen, C., 2012. Analysis of Incentives and Disincentives for Maize in Malawi. Techinical notes series, Monitoring African Food and Agricultural Policies (MAFAP), FAO, Rome Available at: www.fao.org/mafap

Dulle, F.W., Lwehabura, M.J.F., Mulimila, R.T. and Matovelo, D.S. 2001. Researchers'perspectives on agricultural libraries as information sources in Tanzania. *Library Review* , 50(4):187-192.

Echezona. R. I. (2007). The Role of Libraries in Information Dissemination for Conflict Resolution, Peace promotion and Reconciliation. *African Journal of Library, Archives and Information Science.* 17(2).

Elisa, O. (2013). When Technology Doesn't Fit: Information Sharing Practices among Farmers in Rural China. In Proceedings of the Sixth International Conference on Information and Communication Technologies and Development (ICTD '13), 165- 176. http://doi.acm.org/10.1145/2516604.2516610

Elly,T and Silayo, E. E., (2013) "Agricultural information needs and sources of the rural farmers in Tanzania: A case of Iringa rural district", *Library Review*, 62 (8/9),547-566, https://doi.org/10.1108/LR-01-2013-0009

Food Security Monitoring Report, Malawi. (2005). www.fao.org/elearning/course/f6/en/pdf/malawi_vac_report.pdf

Garforth C (2001) Agricultural knowledge and information systems in Hagaz, Eritrea. http://www.fao.org/sd/2001/KN1001a_en.htm

Farm Radio International (FRI). (2011). Participatory Radio Campaigns and Food Security: How radio can help farmers make informed decisions. Ottawa.

Forsyth, E. (2005). Public libraries and the millenium development goals. *Ifla Journal 4,* (315-323).

Gondwe, T.N.P., Ambali, A.J.D., Chilera, F.C., Lwesya, H. & Wollny, C.B.A. (1999). Rural poultry biodiversity in Lilongwe and Mzuzu Agricultural Development Divisions (ADD), Malawi. *Malawi J. Science and Technol.*, 5, 17-25.

Indrani Medhi-Thies, Pedro Ferreira, Nakull Gupta, Jacki O'Neill, and Edward Cutrell. (2015). KrishiPustak: A Social Networking System for LowLiterate Farmers. In Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing (CSCW '15): 1670-1681. http://doi.acm.org/10.1145/2675133.2675224

Idrisa, Y. I., Gwary, M. M., & Shehu, H. (2008). Analysis of food surety status among farming household in Jere Local Government of Borno State, Nigeria. *Journal of Tropical Agriculture, Food, Environment and Extension,* 7(3), 199-205.

Islam, M.S. and Hasan, M.N. 2009. Multipurpose community telecentres in Bangladesh: problems and prospects. *The Electronic Library*, 27(3):537-553.

Lesaoana-Tshabalala BV (2003) Agricultural information needs and resources available to agriculturalists and farmers in a developing country with special reference to Lesotho. MA thesis. Pretoria: University of Pretoria. http://etd.rau.ac.za/theses/available/etd-03242004125946/ restricted/ThabalaThesesFinal.pdf

Lwoga, E.T. (2010). Bridging the agricultural knowledge and information divide: The case of selected telecenters and rural radio in Tanzania, *Electronic Journal on Information Systems in Developing Countries* 43(6), 1–14.

Lwoga, E. T. Stilwell, C.,(2011). Access and use of agricultural information and knowledge in Tanzania. *Library Review*. 60 (5)

Lwoga, E.T, Ngulube P and Stilwell C (2010) Information needs and information seeking behaviour of smallscale farmers in Tanzania. *Innovation* 40 (June), 82–103.

Mtega, W. And Benard, R. (2013). The state of rural information and communication services in Tanzania: a meta-analysis. *International Journal of Information and CommunicationTechnology Research,* 3(2), 64 – 73

Mchombu, K. J. (2006). Libraries, literacy and poverty reduction: a key to African Development. A research paper looking at libraries in Africa Commissioned by Book Aid International and sponsored by the Commonwealth Foundation.

Matovelo DS, Msuya J and de Smet E (2006) Towards developing proactive information acquisition practices among smallholder farmers for empowerment and poverty reduction: a situation analysis. International Association of Agricultural Information Specialists (IAALD) Quarterly Bulletin 51(3-4), 256–264.

Meitei LS and Devi TP (2009) Farmers information needs in rural Manipur: An assessment. Annals of Library and Information Studies 56, 35–40.

Mtega, W.P., 2012, 'Access to and usage of information among rural communities: A case study of Kilosa District Morogoro Region in Tanzania', *Partnership: The Canadian Journal of Library and Information Practice and Research* 7(1).
Ngwira, F. and Majawa, F. (2017). Exploring use of Knowledge Management (KM) principles in the Agriculture sector: Case of Zombwe Extension Planning Areas (EPA) Mzuzu Agricultural Development Division (MZADD) Mzimba, Malawi. In: *proceedings of the 24th Eastern and Southern Africa Regional Branch International Conference for Archivists (ESARBICA)* held in Lilongwe from 7 to 11 August 2017

Ngwira, N., (2003) *Women's poverty and inheritance rights and the land reform process in Malawi*. Institute for Policy Research and Analysis for Dialogue. Blantyre, Malawi.

NSO. (2008). Integrated Household Survey 2007-2009. National Statistical Office, Zomba, Government of Malawi.

Odini, S. (2005). Information seeking and communication behaviour of Kenya Railways Engineers. *University of Dar es Salaam Journal 7(2)*.

Odini, S. (2014) Access to and Use of Agricultural Information by Small Scale Women Farmers In Support of Efforts to Attain Food Security in Vihiga County, Kenya. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)* 5(2):80-86
Ogboma,M.U (2010). Access to agricultural information by fish farmers in Niger delta region of Nigeria, *Journal of Library Philosophy and Practice* Available at ttp://www.faqs.org/periodicals/201009/2166597671.htm

Rhoe, V., Oboh, V. and Shelton, P. 2010. *The role of libraries in supporting agricultural policy research: evidence from selected university and research institute libraries in Nigeria*. Abuja: IFPRI. [Online].http://www.ifpri.org/sites/default/files/publications/nsspbp14.pdf (02 December 2017).

Riesenberg, L.E and Gor, C.O. (1999). Farmers' Preferences for Methods of receiving information on new or innovative farming practices", Graduate Student University of Idaho 5th April 2007. http://pubs.aged.tamu.edu/jae/pdf/vol30/30-03-07.pdf

Savolainen R (2008) Source preferences in the context of seeking problem-specific information. Information Processing and Management 44(1), 274–293.

Shetto, M.C., 2008, 'Assessment of agricultural information needs in African, Caribbean and Pacific (ACP) States Eastern Africa Country study: Tanzania', *Final Report*, viewed 10 January 2015, from http://www.researchintouse.com/resources/ext/cta08tz- agriinfoneed-rpt.pdf

Semeon, G., Meshesha, M Gerfield, M & David, D (2013). Agricultural Knowledge Management Systems in Practice: The Ability to Support Wereda Knowledge Centers in Ethiopia. Proceedings of the Nineteenth Americas Conference on Information Systems, Chicago, Illinois, August 15-17, 2013

Sokoya, A.A ,Onifade, F .N and Alabi, A.O,(2012). Establishing Connections and Networking: The Role of Social Media in Agricultural Research in Nigeria.Available athttp://conference.ifla.org/ifla78.

Starasts, A. M. (2004). Battling the Knowledge factor: A Study of Farmers' Information Seeking Learning and Knowledge Process with an online environment in Queensland. Unpublished Ph.D Thesis.

Tologbonse, D. Fashola, O. and Obadiah, M (2008). Policy Issues in Meeting Rice Farmers Agricultural Information needs in Niger state, *Journal of agriculture extension*, vol.12 (2), Available at ajol.info/index.php/jae/article/view/47053/33437

Williams, M. and Trywell, K. (2010). Evaluation of the Agricultural Information System (AIS) in Lisotho. *International Journal of Information Management.* Vol. 30. www.elsevier.com

World Bank, (2001). *Extension and rural development: A convergence of views on institutional approaches*? International Workshop, Nov. 12–14. The World Bank, Washington, DC.

World Bank (2006) World development indicators. Washington, DC: World Bank. http://data.worldbank.org/sites/default/files/wdi06.pdf (Accessed 10 May 2013).

World Bank. (2015). World Bank's World Development Indicators.

ICTS AND LIBRARY AND INFORMATION SERVICES

TECHNOLOGY ACCEPTANCE FACTORS IN THE USE OF INSTITUTIONAL REPOSITORIES: THE CASE OF THE UNIVERSITY OF SWAZILAND (UNISWA)'S FACULTY OF AGRICULTURE AND CONSUMER SCIENCES

Nokuphila Rene Saulus
Assistant Librarian, University of Swaziland,

Stephen Mutula
Dean, School of Social Sciences, University of KwaZulu-Natal,
and
Nkosinathi Dlamini
Senior Assistant Librarian, University of Swaziland.

Abstract

Institutional Repositories (IRs) have become essential infrastructures for freely disseminating scholarly output to researchers' world over without any access barriers. IRs were introduced to ease information access constraints which were faced by libraries worldwide in the 1990s. These included excessive library budget cuts, annual increases in journal prices above inflation rates, and the devaluation of local currencies. These made it difficult for libraries to maintain their journal subscriptions. Librarians thereby expected IRs to be accepted and fully embraced by users. This however, has not been the case. Factors including the ease of navigating IRs, perceived usefulness, the use of IRs by peers, and the availability of resources to support the usage of IRs have influenced user's decisions to adopt and use IRs. This paper therefore examined technology acceptance factors likely to promote or inhibit UNISWA faculty from using their IR. It further highlighted how these factors could be mitigated to promote the effective dissemination of library information resources through IRs. Questionnaires were used to collect data from academic staff. This paper was underpinned by the Unified Theory of Acceptance and Use of Technology (UTAUT), which assessed what happened as users interacted with the IR, and predicted their future usage intentions. Research findings revealed that performance expectancy, effort expectancy, and facilitating conditions influenced UNISWA faculty's intensions to accept and use the repository. Social influence however, did not influence faculty's decisions to use the IR. The discussed issues have implications on research, policy enhancement and theory in developing country contexts.

Keywords: *Institutional Repositories; Information Technologies; Technology Acceptance; University libraries; Swaziland.*

Introduction

The development of networked communication and digital technologies radically changed the way researchers create, distribute, and access scholarly work (Dubinsky, 2014). Prior to the advent of the internet and information technology, scholarly communication was very slow. Information technological developments thus brought about effective ways to create, store and disseminate scholarly content (Ammarukleart, 2017). One development central to the advances in information technologies is the establishment and growth of institutional repositories (Dubinsky, 2014). IRs are defined as a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members (Lynch, 2003). According to Abrizah (2009), and Buehler & Boateng (2005) institutional repositories have played a vital role in freely providing online access to a wide range of scholarly resources (including peer-reviewed journal articles, book chapters, and conference papers) produced by scholars from universities across the world. Abdelrahman (2017) avers that through capturing, preserving and disseminating universities' intellectual outputs, IRs serve as a meaningful indicator of an institution's academic quality.

Institutional repositories emerged in response to information access constraints which were faced by universities and libraries across the world in the "1990s". These included library budget cuts, annual increases in journal prices above inflation rates, and the devaluation of local currencies, which made it difficult for libraries to continue maintaining their journal subscriptions (Hoskins, 2009). The high annual inflation rates required library budgets to be increased yearly. This resulted in many academic libraries, particularly those with limited budgets, failing to continue maintaining their journal subscriptions, and thereby fewer resources for scholars (Hoskins and Stilwell, 2010). Other academic libraries retaliated to this crisis by increasing the proportion of their budget devoted to journal subscriptions, a situation which left them with less money to purchase monographs and other essential library resources (Young, 2009). Librarians expected IRs to be accepted and optimally utilized to ease the above-mentioned information constraints. However, faculty from various institutions have been slow in embracing the idea of contributing to IRs (Casey, 2012). Such reluctance is a worldwide phenomenon (Mark & Shearer, 2006, and Hazzard & Towery, 2017). Even where there are institutional mandates in place to motivate faculty to deposit their articles, this still does not guarantee their engagement (Hazzard & Towery, 2017).

Literature cites several reasons why IRs have not been effectively utilised by target audiences. These include the lack of awareness about the existence of IRs, fears of violating publisher's copyright requirements, and concerns that work archived in IRs might be regarded by publishers as prior publications (Swan & Brown, 2005, and Mark & Shearer, 2006). Nielsen (2012) further avers that if information systems including IRs are difficult to use or fail to specify services they offer, they are often rejected by users. Ammarukleart (2017) asserts that insufficient knowledge of technology acceptance and adoption at individual level is partly responsible for the underutilisation of innovations and information systems. Tibenderana, (2010) argues that for an information system to add value to a country, organization or individual, it should be accepted and used by the target audiences. Tibenderana (2010) further opines that in order to predict and explain the acceptance and use of technologies, it is essential to understand why people use or do not use them. This study applied the Unified Theory of Acceptance and Use of Technology (UTAUT) to investigate factors contributing to the acceptance and use of the UNISWA IR by members of faculty from faculties of Agriculture and Consumer Sciences.

Study aims and Objectives

The paper sought to address the following research objectives:

(i). To examine the influence of technology acceptance factors including effort expectancy, performance expectancy, social influence and facilitating conditions, on the adoption and use of UNISWAs institutional repository by faculty from Agriculture and Consumer Sciences.

(ii). To assess faculty member's future intensions to use the UNISWA IR.

Theoretical Background

Theories and models are important in directing any research process (Kiwanuka, 2015). This study is underpinned by the UTAUT theory, which was developed by Venkatesh, Morris, Davis, & Davis in 2003. This theory was established based on eight theories of technology use behaviour and technology acceptance. These include the Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB), Technology Acceptance Model (TAM), Motivational Model (MM), Combined TAM and TPB (CTAM-TPB), Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT), Social Cognitive Theory (SCT) (Wasitarini & Tritawirasta, 2015). The UTAUT theory explains user's intensions to use an information system and their subsequent behavioural intensions. This theory identifies four critical constructs which are direct determinants of usage and behavioural intension. These include: Effort Expectancy (EE), Performance Expectancy (PE), Social Influence (SI), and Facilitating Conditions (FC) (Santos-Feliscuzoa & Himang, 2011). These authors define EE as the level of convenience or ease associated with the use of a system; PE as individual's beliefs that using a particular information system will help them achieve gains in performance; SI as the degree to which an individual perceives the importance of the social environment in the use and adoption of a new system; and FC as a person's belief that organizational and technical facilities are available to support their use of an information system. Figure 1 below shows the UTAUT theory.

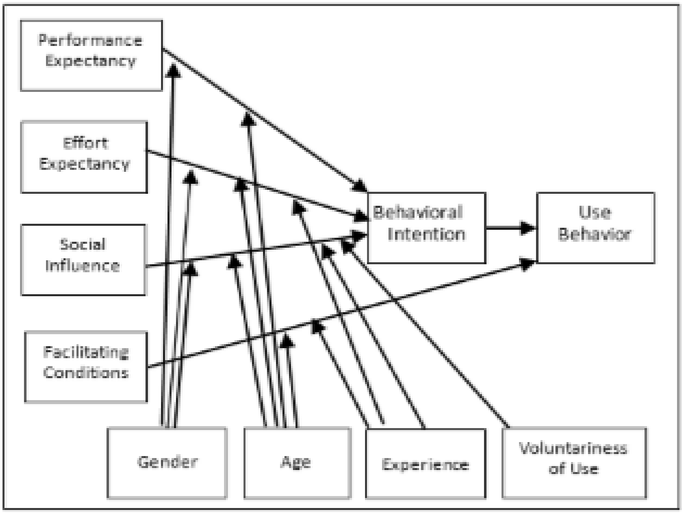


Figure 1 The UTAUT theory (**Source:** Venkatesh et al., 2003)

According to Kasim (2015), UTAUT includes variables such as gender, age, experience and voluntariness of use which moderate and strengthen the relationships of the four main UTAUT constructs. Venkatesh et al. (2003) avers that UTAUT has been applied and empirically tested in different domains. UTAUT underpins this study because it is robust than any other technology acceptance model in evaluating and predicting technology acceptance This is probably because the theory consolidates eight other technology acceptance theories. Short comings from a certain theory are therefore likely to be neutralised by other theories. Taiwo & Downe (2013) assert that although UTAUT has been widely used, tested and validated, the outcomes from empirical studies have been inclusive regarding the magnitude, direction, and significance of the relationship amongst the model. Taiwo & Downe (2013) further assert that even though the issue of mixed outcomes from various UTAUT studies is uncommon, this does not undermine the accuracy of the model. UTAUT has also been criticised for lacking the trust aspect as one of its constructs, and failing to incorporate "attitudes" amongst mediating factors, when adoption is strongly influenced by anticipated benefits. UTUAT is gaining popularity in LIS.

This section further presents technology acceptance studies from the library and information Science field, which were underpinned by the UTAUT theory. Literature was obtained from sources including books, journal articles and thesis/ dissertations. A study by Chang (2013) which was conducted from Taiwan University libraries, revealed that undergraduate and postgraduate students' intension to adopt library mobile applications were influenced by performance expectancy, effort expectancy, social influence, and facilitating conditions. In the same vein, Santos-Feliscuzoa & Himang (2011) assessed undergraduate and postgraduate student's intensions to accept the library's periodical indexing software. They discovered that all the four UTAUT constructs had a significant effect on user's behavioural intension to use the indexing software. Similarly, Adeleke (2017) examined factors influencing the adoption of automated systems by public library users. Likewise, it was revealed that performance expectancy, effort expectancy, social influence, and facilitating conditions determined the acceptance and use of automated systems. Another study by Wasitarini & Tritawirasta (2015) which investigated the acceptance of the closed library system revealed that performance expectancy, effort expectancy, social influence and facilitating conditions influence usage intensions. In a similar study, Awwad & Al-Majal (2015) assessed the determinants of use behaviour regarding electronic library services, with data obtained through a questionnaire from students from public universities in Jordan. The results revealed that students' intensions to use electronic library services were dependent on performance expectancy, effort expectancy, and social influence, while students their use behaviour was dependent on facilitating conditions, and intention to use.

Slightly different findings were obtained in a study by Ammarukleart (2017) who investigated factors affecting faculty's intensions to accept and use the university of Thailand's institutional repository. The findings revealed that performance expectancy, social influence, and resistance to change directly determined faculty's intensions to use the IR. Behavioural intensions and altruism were also found to be major determinants of actual usage behaviour. On the same note, a study by Rahman (2012) was conducted from Malaysia to investigate factors influencing postgraduate student's willingness to use digital libraries. It was revealed that performance expectancy, effort expectancy, and information quality were positively related to the continued usage of digital libraries. Similarly, Dulle, Minishi-Majanja, & Cloete (2010) examined the extent to which researchers from Tanzanian Universities believed that open access enhanced the accessibility and dissemination of scholarly content. They discovered that effort expectancy, performance expectancy, attitudes, and awareness were key determinants and predictors of Tanzanian researchers' behavioural intension to use open access IRs. They further discovered that social influence and facilitating conditions were significant predictors and had direct effects on the use of open access facilities by researchers.

Methodology

A post positivist paradigm was adopted for the study. The quantitative method was applied using a survey research design. Kiwanuka (2015) opines that original authors of the UTAUT theory expressed their research mathematically (quantitatively), in order to validate them empirically. The target population consisted of all 68 members from the faculties of Agriculture and Consumer Sciences.

Figure 1 below presents the gender of respondents.

Gender	Frequencies	Percentage (%)
Male	27	60
Female	18	40
Total	45	100

Table 1 Gender of Faculty

According to Israel (1992) a census should be used for smaller populations (for example 200 or less). Forty-five (45) out of the 68 distributed questionnaires were returned, and correctly filled. The study was conducted at the University of Swaziland, Luyengo campus, from March to April 2017. The questionnaire was designed based on the UTAUT theory using Likert-type questions (e.g. 5=strongly agree, 4=Agree, 3=Neutral, 2=Disagree, 1=strongly disagree). The data collected from questionnaires was coded and analysed using the statistical package for social sciences (SPSS) version 24. Data was presented using tables and figures (bar graphs). Results of the study were interpreted and discussed based on themes of the study.

Findings

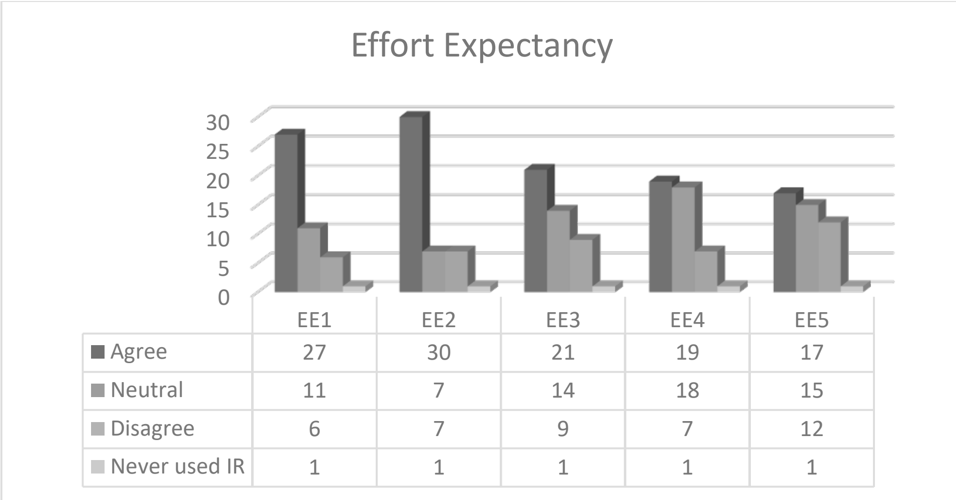
UTAUT Constructs

Technology acceptance data was assessed based on constructs from the UTAUT theory, including effort expectancy, performance expectancy, social influence, and facilitating conditions (see figures 1 to 5 below).

Effort Expectancy

EE examined the effortlessness or ease of using UNISWAs institutional repository. This was based on variables including: learning how to use the IR is easy (EE1); It is easy to become skilful in using the IR (EE2); I am comfortable using the IR on my own (EE3); It is easy to interact with the IR (EE4); and I can do what I want with the IR (EE5). The results are presented in Figure 1 below.

Figure 1 Effort Expectancy construct

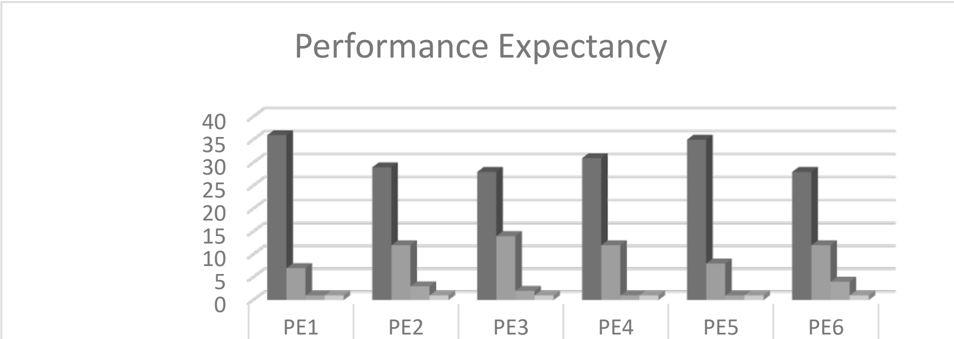


The findings presented in figure 2 revealed that majority of faculty agreed that using the UNISWA IR. is easy and effortless. Out of the 45 respondents, many 27 (60%) of faculty members agreed that it is easy to learn how to use the IR, followed by those who agreed that it is easy to become skilful with the IR, 30 (66.7%); comfortable using the IR on their own, 21 (46.7%); and can do what they want with the IR, 17 (37.8%). Almost the same number of respondents either agreed, 19 (42.2%) or gave a neutral response, 18 (40.0%) regarding the ease of interacting with the IR. Fewer respondents disagreed on the ease of using the UNISWA IR. These findings suggest the usage of the UNISWA IR by faculty from Agriculture and Consumer Sciences is likely to be influenced by the effort expectancy construct.

Performance Expectancy

PE assessed the usefulness of the UNISWA IR based user's perspectives. Perceived usefulness was examined based on variables including: I find the IR useful (PE1); the IR makes my research easier (PE2); the IR increases the visibility of my work (PE3); the IR is a fast way of sharing my research (PE4); the IR ensures that my research is preserved for future use (PE5); and the IR will contribute towards my career advancement (PE6). Results from the PE construct are displayed in figure 2 below.

Figure 2 Performance Expectancy construct



	PE1	PE2	PE3	PE4	PE5	PE6
Agree	36	29	28	31	35	28
Neutral	7	12	14	12	8	12
Disagree	1	3	2	1	1	4
Never used IR	1	1	1	1	1	1

The findings revealed that more than half of faculty agreed that they find UNISWA IR useful. These findings are supported by 36 (80%) out the 45 surveyed faculty members who pointed out that they find the IR useful. Other respondents pointed out that: the IR makes their researching easier, 29 (64.4%); the IR increases the visibility of their work, 28 (62.2%); the IR is a fast way of sharing their research, 31 (68.9%); the IR ensures that their work is preserved for future use, 35 (77.8%), and the IR contributes towards their career advancement, 28 (62.2%). Very few respondents disagreed regarding the UNISWA IRs usefulness. These results indicate that the PE construct influences UNISWA faculty's decisions to adopt and use the IR.

Social Influence

This construct is assessed based on variables including: people who are important to me think I should use the IR (SI1); my lecturers encouraged me to use the IR (SI2); my peers encouraged me to use the IR (SI3); and researchers who are important to me have their copies in the IR (SI4). Results are presented in figure 3.

Figure 3 Social Influence construct

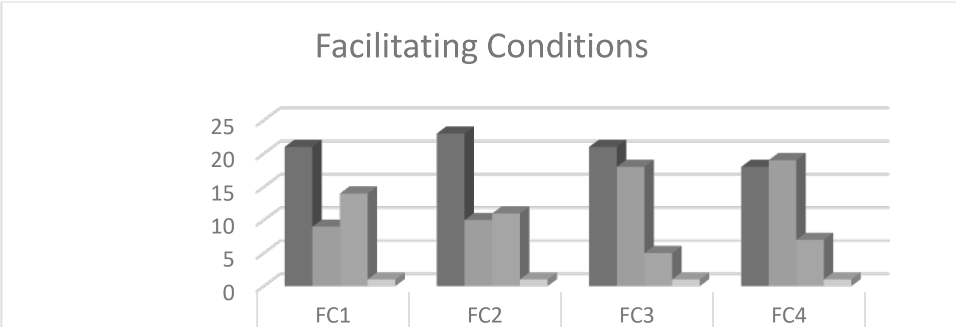
	SI1	SI2	SI3	SI4
Agree	23	8	15	15
Neutral	12	15	12	16
Disagree	9	21	17	13
Never used IR	1	1	1	1

The findings show that slightly more than half, 23 (51.1%) of faculty agreed that they have the required resources to support their use of the IR. Many respondents disagreed to being encouraged by their lecturers to use the IR, 21 (46.7%), followed by 17 (37.8%) who also disagreed to being influenced by their peers to use the IR. These results suggest that the use and acceptance of the IR by UNISWA faculty members from Agriculture and Consumer Sciences is not influenced by the SI construct.

Facilitating Conditions

Facilitating conditions include variables such as: I have resources to support my use of the IR (FC1); I have the required knowledge to enable my use of the IR (FC2); the UNISWA IR is compatible with the university software installed in my computer (FC3); and library staff members are available to assist with any difficulties (FC4). Findings for the FC construct are presented in figure 4 below.

Figure 4 Facilitating Conditions construct



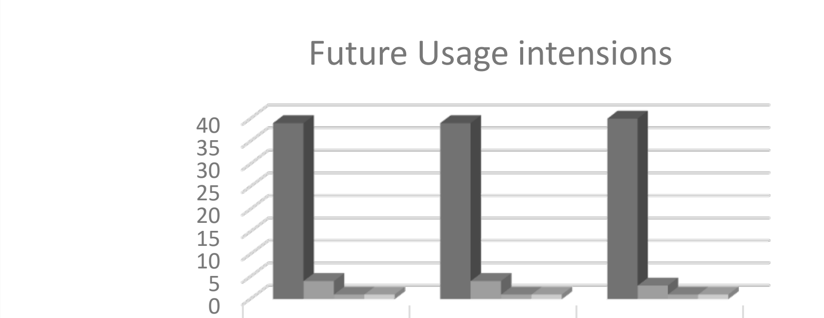
	FC1	FC2	FC3	FC4
Agree	21	23	21	18
Neutral	9	10	18	19
Disagree	14	11	5	7
Never used IR	1	1	1	1

The findings revealed that most respondents agreed that the available conditions are conducive to facilitate the effective running of the IR. Majority of faculty indicated that they have finances and equipment to support their use of the IR, 21 (46.7%); have the required knowledge to enable their use of the IR, 23 (51.1%); the UNISWA IR is compatible with the University's software installed in their computer, 21 (46.7%); and library staff members are available to assist me with the IR, 18 (40%). Few respondents disagreed nor gave neutral responses regarding the availability of necessary conditions to facilitate the effective usage of the IR. Based on the results, it can be concluded that the facilitating conditions construct influences UNISWA faculty's decisions to accept and use the institutional repository.

IR Future Usage Intensions

This section examined whether faculty intended to use the IR or not. The intension to use constructs is comprised of statements including: assuming I can access the IR, I intend to use it in the near future (Int1); I will increase my usage in future (Int 2); and I will encourage my colleagues, friends and students to use the IR (Int3). Findings for the future usage intensions' construct are presented in figure 5 below:

Figure 5 IR Future Usage Intensions construct



	Int 1	Int 2	Int 3
Agree	39	39	40
Neutral	4	4	3
Disagree	1	1	1
Never used IR	1	1	1

The results shown in figure 5 indicate that more than half of UNISWAs faculty from Agriculture and Consumer Sciences gave positive responses regarding their intensions to use the IR. Many respondents agreed that assuming they can access the IR, they intent to use it in future, 39 (86.7%); they will increase their usage in future, 39 (86.7%); and they will encourage their colleagues, friends and students to use the IR, 40 (88.9%). Very few respondents amongst faculty gave neither neutral nor negative responses regarding their future usage intensions.

Discussions

The findings of the study revealed that technology acceptance factors from the UTAUT theory including effort expectancy, performance expectancy, and facilitating conditions influenced UNISWA faculty's decisions to use the institutional repository. The results further revealed that the social influence construct did not convince faculty to use the IR. These results are bolstered by findings obtained in a study by Rempel & Mellinger (2015) who investigated how researchers from Oregon State University in the US adopted bibliographic management tools. Likewise, they discovered that performance expectancy, effort expectancy, and facilitating conditions influenced user's intensions to adopt and use bibliographic management tools. In the same vein, in a study by Jackman (2014) which investigated factors influencing the acceptance of mobile learning technologies amongst undergraduate students from the University of west indies, it was revealed that only PE, EE and FC were major determinants of users' intensions to adopt mobile learning technologies. Yet another study by Moyo

(2015) which assessed factors influencing the use of electronic resources by Zimbabwean students revealed that while PE, EE, and FC influenced students' decisions to adopt electronic resources, SI was nonetheless, an insignificant predictor.

Conflicting results from those of the current study were obtained in a study by Orji (2010) who examined factors affecting the acceptance of the electronic library system by national and international students from selected Canadian Universities. They found that facilitating conditions, effort expectancy, performance expectancy, and social influence are critical in influencing user's decisions to adopt or reject the electronic library system. These constructs however, had varying effects on international and national students. While PE and SI were significant predictors for international students, EE and FC were significant for both groups. A similar study was conducted by Chang (2013) who assessed factors affecting undergraduate users' adoption of library mobile applications in Eastern Taiwan university libraries. It was revealed that PE, EE, SI, FC and task-technology fit determined users' decisions to adopt and use library applications. Taiwo and Downe (2013) opines that such variations in outcomes from the discussed empirical studies could be attributed to the complexity of human behaviour especially in Social Science studies. Taiwo and Downe (2013) further averred that the mixed results do not undermine the accuracy of the UTAUT theory.

The results of the present study further indicated that UNISWA faculty intended to increase their usage of the IR in future, and to encourage their colleagues, friends and students to use the institutional repository. Similar findings were revealed in a study by Koulouris et al. (2013) who discovered that faculty from the Technological Education Institute of Athens in Greece intended to start submitting their research in the institutions repository. Contradictory findings were nonetheless obtained by Mpoeleng, Totolo, & Jibril (2015) who discovered that librarians from the University of Botswana neither agreed nor disagreed on their future intensions to use web 2.0 technologies.

Conclusion and Recommendations

The study assessed technology acceptance factors affecting UNISWA faculty's decisions to adopt and accept their institutional repository. The paper further investigated user's intensions to continue using the IR. The overall findings of the study revealed that UNISWA faculty's decisions to adopt and accept the IR are influenced by the ease of using the IR, their perceptions of the IRs usefulness, and the availability of resources to facilitate their effective usage of the IR. The use of the IR by friends, colleagues and peers did not influence UNISWA faculty's intensions to adopt the IR. It was further revealed that many amongst faculty pointed out that they intended to increase their usage of the IR in future, and to encourage their colleagues, friends and students to use the institutional repository.

This study is the first study to address technology acceptance factors affecting the the adoption and use of the UNISWA institutional repository by faculty. The study contributes to theory and the small body of empirical research on the acceptance and usage of IRs in Swaziland and other parts of Africa. This study is thus expected to play a vital role in guiding IR administrators to identify service areas that need to be improved; informing library management on the extent to which IR users from the agricultural campus are utilising the IR; and enabling IR administrators to recognise any barriers impeding users from effectively using the IR. The study recommends that UNISWA library should conduct needs assessments and usability testings in order to clearly understand users' needs. Ammarukleart (2017) asserts that conducting IR user studies could provide invaluable information which is essential not only in improving the existing IR service but also in launching new IR related services which are tailored based on users' needs. The study further commends the need to raise awareness about the IR through advocacy campaigns, and the frequent training of users to guide them on how to effectively use institutional repositories.

References:

Abdelrahman, O. H. (2017). The status of the University of Khartoum institutional repository. *Annals of Library and Information Studies*, *64*, 44–49.

Abrizah, A. (2009). The cautious faculty: their awareness and attitudes towards institutional repositories. *Malaysian Journal of Library & Information Science*, *12*(2), 17–37.

Adeleke, O. (2017). *An investigation of the extent of automation of public libraries in South West Nigeria*. University of Kwazulu Natal. Pietermaritzburg.

Ammarukleart, A. (2017). *Factors affecting faculty acceptance and use of institutional repositories in Thailand*. University of North Texas, US.

Awwad, M., & Al-Majal, S. (2015). Electronic library services acceptance and use: An empirical validation of unified theory of acceptance and use of technology. *The Electronic Library*, *33*(6), 1100–1120. https://doi.org/https://doi.org/10.1108/EL-03-2014-0057

Buehler, M. A., & Boateng, A. (2005). The evolving impact of institutional repositories on reference librarians. *Reference Services Review*, *33 Issue:*(3), 291–300.

https://doi.org/https://doi.org/10.1108/00907320510611320

Casey, A. M. (2010). Does Tenure Matter? Factors Influencing Faculty Contributions to Institutional Repositories. *Journal of Librarianship and Scholarly Communication*, *1*(1), eP1032. https://doi.org/http://dx.doi.org/10.7710/2162-3309.

Chang, C. (2013). Library mobile applications in university libraries. *Library Hi Tech*, *31*(3), 478–492.

Dubinsky, E. (2014). A current snapshot of nstitutional repositories: growth rate, disciplinary content and faculty contributions. *Journal of Librarianship and Scholarly Communication*, *2*(3), eP1167. https://doi.org/http://dx.doi.org/10.7710/2162-3309.1167

Dulle, F. W., Minish-Majanja, M. K., & Cloete, L. M. (2010). Factors influencing the adoption of open access scholarly communication in Tanzanian public universities. In *Paper presented at the World Library and Information Congress: 76th IFLA general conference and assembly10-15 August 2010, Gothenburg, Sweden*. Retrieved from http://conference.ifla.org/past-wlic/2010/138-dulle-en.pdf

Hazzard, J., & Towery, S. (2017). Workflow development for an institutional repository in an emerging research institution. *Journal of Librarianship and Scholarly Communication*, *5*(General Issue), eP2166. https://doi.org/https://doi.org/10.7710/2162-3309.2166

Hoskins, R. (2009). *The effect of the crisis in scholarly communication on university libraries in South Africa*. University of Kwazulu Natal, Pietermaritzburg.

Israel, G. (1992). *Sampling the evidence of extension programs impact: program evaluation and organizational development.* Institute of Food and Agricultural Sciences, University of Florida.

Jackman, G. (2014). Investigating the factors influencing students' acceptance of mobile learning: the Cave Hill Campus experience. *Caribbean Educational Research Journal*, *2*(2), 14–32.

Kasim, A. (2015). Factors affecting knowledge sharing using virtual platforms – a validation of Unified Theory of Acceptance and use of technology (UTAUT). *International Journal of Managing Public Sector Information and Communication Technologies (IJMPICT)*, *6*(2).

Kiwanuka, A. (2015). Acceptance process: the missing link between UTAUT and Diffusion of Innovation Theory. *American Journal of Information*

Systems, *3*(2), 40–44.

Koulouris, A., Kyriaki-Manessi, D., Giannakopoulos, G., & Zervo, S. (2013). Institutional repository policies: best practices for encouraging self-archiving. *Procedia - Social and Behavioral Sciences*, *73*, 769 – 776.

Lynch, C. (2003). Institutional repositories: essential infrastructure for scholarship in the digital age. Retrieved September 4, 2017, from https://www.cni.org/publications/cliffs-pubs/institutional-repositories-infrastructure-for-scholarship

Mark, T., & Shearer, K. (2006). Institutional repositories: a review of content recruitment strategies. In *World Library and Information Congress: 72nd IFLA general conference and council 20-24 august 2006, Seoul, Korea*.

Moyo, E. T. (2015). *The use of electronic resources by students at the institute of chartered accountants of Zimbabwe*. National University of Science and Technology, Bulawayo, Zimbabwe.

Mpoeleng, D., Totolo, A., & Jibril, L. (2015). Perceptions of University of Botswana librarians on the potential of web 2.0 tools. In *IFLA WLIC, Capetown*.

Nielsen, J. (2012). Usability 101: introduction to usability. Retrieved June 12, 2016, from https://www.nngroup.com/articles/usability-101-introduction-to-usability/

Orji, R. (2010). Impact of gender and nationality on acceptance of a digital library: an empirical validation of nationality Based UTAUT Using SEM. *Journal of Emerging Trends in Computing and Information Sciences*, *1*(2), 68–79.

Rahman, A. (2012). *Acceptance and continued use of digital libraries by postgraduate students in Malaysian intensive research universities*. Universiti Teknologi Mara, Malaysia.

Rempel, H., & Mellinger, M. (2015). Bibliographic management tool adoption and use: a qualitative research study using the UTAUT model. *Reference & User Services Quarterly*, *54*(4), 43–53.

Santos-Feliscuzoa, L., & Himang, C. (2011). Library periodical indexing software evaluation using Unified Theory of Acceptance and Use of Technology. *Procedia - Social and Behavioral Sciences*, *25*, 104–114.

Swan, A., & Brown, S. (2005). Open access self–archiving: an author study. Retrieved from http://www.keyperspectives.co.uk/openaccessarchive/reports/Open Access II (author survey on self archiving) 2005.pdf

Taiwo, A., & Downe, A. (2013). The theory of user acceptance and use of technology (UTAUT): a meta-analytic review of empirical findings. *Journal of Theoretical and Applied Information Technology*, *49*(1), 48–58.

Tibenderana, P. (2010). *A model for measuring levels of end-users' acceptance and use of hybrid library services and its applicability to universities*. Makerere University, Uganda.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly*, *27*(3), 425–478.

Wasitarini, D., & Tritawirasta, W. (2015). Assessing users' acceptance toward a closed access library service system using the UTAUT model: a case study at the national library of Indonesia. In *International Conference on Information Technology Systems and Innovation (ICITSI) Bandung – Bali, November 16 – 19, 2015*.

Young, P. (2009). The serials crisis and open access: a white paper for the Virginia Tech Commission on Research. Retrieved September 4, 2017, from https://scholar.lib.vt.edu/faculty_archives/YoungP/OAwhitepaper.pdf

IMPLICATIONS OF BIG DATA ON THE ROLE OF LIBRARIES IN THE REALIZATION OF SUSTAINABLE DEVELOPMENT GOALS (SDGS)

Christine Kiconco
Assistant Lecturer,
East African School of Library and Information Science
College of Computing and Information Science
Makerere University

Abstract

This paper presents an evaluation of the implications of big data on the role of libraries towards realization of sustainable development goals (SDGs). The paper begins with a brief overview of the concept big data and its potentials followed by a discussion of the role of libraries in the realization of SDGs. It then focuses on big data implications on the role of libraries as evident via new innovations that have moved the library's focus from being keepers of information resources to innovative technological developments and the effect these have on service provision and attainment of SDGs. Literature reviewed was selected from Academic Journal Databases popularly known to contain Library and Information Science publications (Elsevier, Emerald, Sage and Ebsco Host), International Federation of Library Associations (IFLA) and United Nations Global Pulse websites as well as Google Scholar. Literature reviewed indicates that libraries contribute to improved outcomes across the SDGs by supporting their implementation in regards to providing access to information, literacy and ICT skills and access to community space. However, as a result of big data deluge, the role of libraries and information professionals is changing in various ways including new roles such as libraries as innovation centers, data curation, research data management, designing taxonomies and community engagement. There are also challenges associated with this data deluge on libraries especially those in the developing world where technology infrastructure is still poor, skills required for new roles still beginning to evolve, lack of motivation among LIS professionals, lack of partnerships between governments and libraries, issues with open data policies among others. There is need for updating of Library and Information Science (LIS) curriculum especially in African Universities and continuous professional development trainings to cope up with the new roles and expectations. Libraries need to aggressively intensify advocacy for freedom of access to information balanced against protecting human privacy; build partnerships with governments, design taxonomies that address privacy and access, intensify information literacy and advocate for policy reform especially in developing countries to address the issues that have come up due to advances in information technology in particular, big data revolution.

Key words: *Big data; Role of libraries; Global Development Agenda; Sustainable Development Goals; SDGs*

Introduction

In just a short time, big data has caught global attention and spurred creative innovations in nearly every field and libraries as engines of access to information have also been affected by this new trend. Though, the role of libraries has traditionally been to collect, preserve and disseminate the intellectual output of the society which includes books, serials and other materials; scientists, scholars and all of society are now producing, storing and disseminating digital data that underpin the aforementioned documents in much larger volumes than before (Heidorn, 2011). Hoy, (2014) reported that modern life produces data at an astounding rate and shows no signs of slowing. This is attributed to the recent developments in ICT in particular, the widespread diffusion of digital technologies and their adoption in work places and individual lives that has led to explosive growth in volume and variety of digital data leading to new advances in data storage and analysis and the concept “big data” data (Miorandi, Sicari, De Pellegrinia, & Chlamtac, 2012; UN, 2013; Simo, 2015). Cisco and World Economic Forum report that a flood of data is created every day by interactions of billions of people using digital devices and that online or mobile financial transactions, social media traffic and GPS coordinates now generate over 2.5 quintillion byes of so called “big data” every day (Cisco, 2016; World Economic Furum, 2012). Michael and Miller argue that although data mining has occurred since people started to maintain records in the modern era, the so-called “big data” brings together not only large amounts of data but also various data types that previously never would have been considered together (Michael & Miller, 2013).

Essentially, (IFLA, 2015; United Nations, 2015) recognized that utilizing the data revolution is a critical enabler of the global goals not only to monitor progress but also to inclusively engage stakeholders at all levels to advance evidence-based policies and programs and to reach the most vulnerable and that access to information would be very crucial in attaining the global goals. Libraries have always been expected to provide access to information which entailed collecting, organizing and providing access to collections. As a result of big data deluge, there has been paradigm shift in focus from managing collections to one that emphasizes outreach and engagement. During the World Economic Forum held in Davos, Switzerland in January 2016, it was foreseen that a combination big data and new technologies were gradually merging to create a new reality which has the potential for revolutionizing our way of life to which (Frederick, 2016; Sugimoto, Ding, & Thelwall, 2013) foresaw the likelihood of changing role of libraries and wondered what role libraries might play in this revolution and how the information environment could be forever changed. With this trend, the pressure for libraries most especially those in developing countries to keep up with not only big data deluge but more profoundly with new expectations are immense.

The purpose of this review therefore was to ignite scholarly conversation on how big data affects the role of libraries as they strive to contribute to the realization of SDGs. The paper is motivated by the exceptional discourse places on big data's potential to transform into value for development endeavors (Chen & Zhang, 2014; De Mauro, Greco & Grimaldi, 2016; IFLA, 2015; United Nations, 2015; World Economic Forum, 2012). This review tries to explore three key questions; (1) what is the role big data in realization of SDGs (2) what role do libraries play in the realization of SDGs?; and (3); what are the implications of big data on the role of libraries in the realization of SDGs?

The 2030 Agenda for Sustainable Development

The Global Development Agenda commonly known as "the 2030 Agenda for Sustainable Development is the new global development framework anchored around 17 SDGs adopted in 2015 by heads of states and governments at a special United Nations summit building on the Millennium Development Goals (MDGs) to include issues such as natural resources management, sustainable consumption and production, effective institutions, good governance, the rule of law and peaceful societies (United Nations, 2015). The SDGs are global in nature, universally applicable and all countries have a shared responsibility to achieve them. Poverty eradication is the overarching goal of the new agenda which is taking a far more ambitious approach than the Millennium Development Goals (MDGs)

Figure 1 below shows a summary of the SDGs

Source: http://www.un.org/sustainabledevelopment/sustainable-development-goals/

To achieve the above agenda, it was recognized that access to information was key and that tapping into new data sources, algorithms and technologies are necessary to complement traditional methodologies (IFLA, 2015; United Nations, 2015; 2016). In addition, (Banisa, 2015) postulated that, once well analyzed, big data has the potential to promote participatory development, empowering all people to exercise their rights and address their own development challenges. In addition, the International Council for Science (ICSU) argues that, the scientific opportunities of this data-rich world lie in discovering patterns that have hitherto been beyond our reach for instance in weather and climate forecasting, in the behavior of the global economy, in evaluating agricultural productivity and in many of contemporary global challenges such as those of environmental change, infectious disease and mass migration that require combined insights and data from many disciplines (International Council for Science (ICSU), 2014: p.2).

Big data

The meaning of the concept "big data" is rather misleading that one might think that it is all about very large volumes of data. On that note, literature indicates an on-going debate over its meaning (Bradley, 2016; Chen, Chiang, & Storey, 2012; Diebold, 2012; Gandomi & Haider, 2015; Kwon, Lee, & Shin, 2014; Kshetri, 2014; Laney, 2001; Lohr, 2013; OED, 2016). Oxford English Dictionary included the term 'big data' in its online update for the first time in 2013 to refer to extremely large data sets that may be analyzed computationally to reveal patterns, trends and associations especially relating to human behavior and interactions (OED, 2016). Boyd & Crawford, (2012) looks at big data a as a cultural, technological, and scholarly phenomenon that rests on the interplay of: (1) Technology: maximizing computation power and algorithmic accuracy to gather, analyze, link and compare large data sets (2) Analysis: drawing on large data sets to identify patterns in order to make economic, social, technical, and legal claims (3) Mythology: the widespread belief that large data sets offer a higher form of intelligence and knowledge that can generate insights that were previously impossible, with the aura of truth, objectivity and accuracy. However, Douglas Laney's 2001 big data framework based on the three V's (volume, variety and velocity) seems more befitting considering that these characteristics reflect large amounts of different types of data, both structured and unstructured, arriving at a fast and constant pace, requiring real-time analytics to derive meaningful information and knowledge (Laney, 2001). Other studies such as (Chen, Chiang, & Storey, 2012; De Mauro, Greco, & Grimaldi, 2016; ICSU, 2014; Kwon, Lee, & Shin, 2014) support this definition. For instance, De Mauro, Greco, and Grimaldi analyzed an amount of industry and academia articles on big data and found out that the main themes of big data were "information, technology, methods and impact" and thus defined the term as the information asset characterized by such a high volume, velocity and variety to require specific technology and analytical methods for its transformation into value" (De Mauro, Greco, & Grimaldi, 2016). In this study the concept "big data" is defined as datasets of large volume, velocity and variety that require more complex real time analytical tools to derive meaningful information and knowledge that supports timely decision making.

Methodology

This paper is based on literature review on the concept big data and its implications on the role of libraries in the global development agenda. Literature reviewed was selected from Academic Journal Databases popularly known to contain Library and Information Science publications (Elsevier, Emerald, Sage and Ebsco Host), International Federation of Library Associations (IFLA) and United Nations Global Pulse websites as well as Google Scholar.

Big data and its role in the realization of SDGs

The role of big data analytics in realization of SDGs has been well documented and its potential in attaining global development agenda is no longer questionable (Bays, 2014; Chunara, Andrews & Brownstein, 2012; Global Pulse, 2016; Greeley, Lucas, Chai, & Cummins, 2013; IBM, 2013; Koo, Piratla, Kalyan, & Mathews, 2015; Papadopoulos, Gunasekaran, Dubey, Altay, Childe, & Fosso-Wamba, 2017; Raghupathi & Raghupathi, 2014; Siedner, Lankowsk, Tsai, & Muzoora, 2013; United Nations, 2015; Verhulst, 2016). For instance, twitter messages were analyzed to reveal the spread of the 2010 Haitian cholera outbreak two weeks earlier than official statistics (Chunara, Andrews, & Brownstein, 2012). Moreover (Greeley, Lucas, Chai, & Cummins, 2013) reveal that use of real time digital information for monitoring mHealth and eHealth has been remarkable. In Uganda, big data is being used to monitor HIV clinic absenteeism by patients accessing care in rural, resource-limited settings using a GPS (Siedner, Lankowsk, Tsai, & Muzoora, 2013). Retail companies use big data to improve services and products through customer analytics, customer behavior, sentiment analysis, profiling and segmentation. Governments use big data analytics to gain insight into citizen activities and requirements, detect fraud or abuse of services, focus "nudging" on specific behavior, strengthen national security and better allocate government resources. Financial institutions are using big data to better identify their customer markets and assess risks, including creditworthiness and default rates. In Sudan, big data was used to monitor poverty trends using satellite imagery and image processing software to count roofs and identify the type of material they are constructed from (Global Pulse, 2016). In the U.S, an internet of things application was developed to leverage all data into a big data water usage and achieve high levels of sustainability in water supply which has positive implications on incomes and livelihoods (Koo, Piratla, Kalyan, & Mathews, 2015). In Napal, (Papadopoulos, Gunasekaran, Dubey, Altay, Childe, & Fosso-

Wamba, 2017) explain how use of un structured big data from tweets, news, facebook, word press, istogram, google+ and youtube combined with structured data via responses from 205 managers in the aftermath of Napal earthquake in 2015 contributed timely information to enhance disaster planning and management. In Indonesia, Pulse Lab Jakarta lab in 2016 began to extract useful information from social and combine the signals with other sources of digital data for real time insights on disaster impact and human well-being (United Nations, 2015). Below are more examples where big data has been harnessed to contribute towards realization of SDGs.

Figure 2 below shows examples where big data has been harnessed to contribute towards realization of SDGs

Related SDG(s)	Project	Partners	Data Type	Country	Lab
FOOD AND AGRICULTURE					
2	Mobility Profiles for Food Security and Livelihoods	WFP	Mobile	Senegal	Kampala
2	Crowdsourcing High-Frequency Food Price Data	FAO, WFP	Crowdsourcing	Indonesia	Jakarta
ECONOMIC WELL BEING					
1 8 9	Estimating Economic Activity from Postal Data	Universal Postal Union (UPU)	Postal	Global	New York
1	Roof Counting as a Proxy of Poverty Trends	Uganda Bureau of Statistics, UNDP	Satellite imagery	Uganda	Kampala
10 11 16	Citizen Feedback for Enhanced Local Government Decision-Making	LAPOR! (Office of the President)	Government data collection systems	Indonesia	Jakarta
1	Using Airtime Purchases to Detect Economic Shocks		Airtime credit	Uganda	Kampala
9 12	Analysing Public Perceptions of Fuel Subsidy Reform	Ministry of National Development Planning (Bappenas)	Social media	Indonesia	Jakarta
16	Improving Knowledge Sharing on Peace and Governance	Government of Ghana, UNDP	Governance and Peace (GaP) poll	Ghana	Kampala
8	Reflections on Unemployment	UNICEF	Social media	Indonesia	Jakarta
3 9 12	Understanding Changes in Perceptions on Biofuels	David and Lucile Packard Foundation	Social media	UK, Germany, the Netherlands	New York
CLIMATE AND RESILIENCE					
3 11 13	Supporting Forest and Peat Fire Management	UNORCID	Social media	Indonesia	Jakarta
PUBLIC HEALTH					
3 16	Supporting Response to Infectious Disease Outbreaks	Ministry of Health, WHO	HMIS, DHIS2	Uganda	Kampala
3	Real-Time Monitoring of HIV Treatment Protocols	Ministry of Health, UNAIDS	Health data	Uganda	Kampal a
3 10	Informing Communication Campaigns Around HIV and Discrimination	Ministry of Health, UNAIDS	Social media	Brazil	New York
3 16	Understanding Awareness and Sentiment on Immunisation	Bill & Melinda Gates Foundation	Social media, news outlets	Nigeria, Pakista	New York
DATA PRIVACY AND DATA PROTECTION					
3 9 16	Mapping the Risk-Utility of Mobile Data for Sustainable Development	Massachusetts Institute of Technology (MIT)	Mobile	Global	New York
GENDER					
5 10 16	Gaining Insights on Child Marriage from Social Media	David and Lucile Packard Foundation	Web searches, speeches	Global	New York

Source: UN Global Pulse Annual Report, 2015

Role of libraries towards realization of SDGs

The role of libraries in the global development agenda had been well documented (Amunga, 2011; Bell, 2016; Bradley, 2016; Chigbu & Nkechi, 2013; Dada, 2016; Frederick, 2016; Greyling & Zulu, 2010; Huwe, 2014; IFLA, 2014; 2015; 2016; Kwanya, 2016; Sabaratnam & Ong, 2016; United Nations, 2015). IFLA is consistent in its position that access to information is essential in achieving the SDGs**,** and that, libraries are not only key partners for governments but are already contributing to progress towards the achievement of the 17 Goals. For instance, library services contribute to improved outcomes across the SDGs by supporting their implementation in regards to providing access to information, literacy and ICT skills and access to community space (Namhila & Niskala, 2013).

At the international level, information professional organizations such as, IFLA and EIFL have for some time funded libraries in developing countries especially Africa to conduct ICT skills trainings and access to electronic resources. For instance (Elbert, Fuegi, & Lipeikaite, 2012) reveal that EIFL Public Library Innovation Program awards grants to public libraries globally to address a range of social-economic issues facing their communities including projects in Kenya, Ghana and Zambia among others. In addition, the United States former President Barack Obama on a visit to Anacostia Neighborhood Library on April 30 2015 announced two new initiatives (ConnectED Library and eBooks initiatives) that promised to rally America's libraries, publishers and non-profit organizations to strengthen learning opportunities for all children particularly in low-income communities (Peet, 2015).

In Singapore, the nation's libraries came up with new ways serve the needs of their communities through library innovations paying particular attention to digital products and services that include library management systems, e-resources, digital devices as well as the utilization of social media to engage users (Sabaratnam & Ong, 2016). Many librarians across the globe are currently leveraging social networking and social media to provide dynamic library services (Mabweazara & Zinn, 2016; Maidul & Umme, 2015).

In Nigeria, (Chigbu & Nkechi, 2013) reveals that the realization of a country's vision is knowledge driven and librarians are active players in identifying, maintaining and making available knowledge assets. The library is seen as an agency for findings, discovery, innovation, vocational skills repository, scholarship and research (Adeleke, Okusaga & Lateef, 2002; Dada, 2016). Libraries and information professionals help to leverage knowledge assets through the provision of world class information, manpower training and capacity building all of which can impact on realization of SDGs.

In South Africa, the National Library of South Africa (NLSA) provides a network of delivery sites for government programmes and services, serving at the heart of the research and academic community and preservation of national heritage. NLSA is responsible for preserving the cultural heritage of the people of South Africa and fostering social cohesion (Maepa & Marumo, 2016). It also runs a number of programmes that contribute directly or indirectly to the attainment of Sustainable Development Goals. NLSA contributes immensely to the education of young adults through provision of free access to ICT's, reading and research spaces and workshops aimed at preparing young people for the job market; provides relevant information that relates to some of the Goals, such as information on climate change to support researchers and providing health-related information, as well as information on how to access government services.

In Botswana, public libraries have taken large strides toward supporting government objectives including introducing ICT access, improving computer skills of library users and enabling users to be successful in business, education and employment (Bradley, 2016; IFLA, 2015). Aside from that, the Botswana Library Association developed a strategy to support the Government's vision 2016 in seminars, conferences, and symposium for institutional capacity of libraries by encouraging all citizens to discuss as stakeholders in inclusive and sustainable growth, energy and infrastructure development in the attainment of sustainable development in the education sector. Kenya libraries also offer information literacy training (Amunga, 2011).

In Uganda, the National Library of Uganda (NLU) provides ICT training to female farmers to access weather forecast, crop prices and online markets in their local languages which increase the economic wellbeing of women through technology skills (IFLA, 2015). NLU is also developing a programme to "help pregnant teenagers learn to use technology to access information that will help them improve their health and livelihoods". Kitengesa Community Library runs similar programmes. In addition, Makerere University has been at the fore front in providing health information literacy to health professionals and local communities (Musoke, 2014).

Literature reviewed reveals that libraries and information professionals play a very key role in the realization of the 2030 global development agenda. However, the present digital environment has brought a lot of changes not only on the library and information services but also on the roles and expectations of information professionals. The next part is a review of literature on the implications of big data on the role of libraries.

Implications of big data on the role of libraries in realization of SDGs

There are many areas where the role of libraries is changing due to the big data revolution.

A new role in research data management

It is stated that the data deluge made possible by the ubiquity and data power of computation and networks was beginning to overwhelm traditional methods of data storage and management which forced libraries to begin redefining their role and place in the digital scholarly communication ecosystem (Rambo, 2015). Patrick Morehead an industry analyst with Futurum Research and Analysis says that given the shortage of data scientists, it is clear that organizations of all sizes need to find ways to pool big data resources but the real challenge is that even when those big data analytics resources are found, making sense of all the data an organization has, takes time (Vizard, 2016). Libraries however have one big advantage relating to any big data analytics applications because they are familiar with the ontology work associated with creating the metadata that drives those applications. For instance, Purdue University’s library in collaboration with information technology research department created a data repository (Purdue University Research Repository) and was at the forefront of data instruction and reference while also providing guidance metadata standards (Witt, 2012). In addition, (Kelley, 2013) reveals that Roger Brisson the head of metadata services at Boston University Libraries has been deeply immersed in the cloud-based library services platform Alma from Ex Libris which he says is addressing the challenges that have emerged from the dramatic growth in scholarly research and scholarly communication.

Data curation

The emergence of linked data has simultaneously created a broad spectrum of new cases for library data changing the role of libraries for instance, IFLA reveals that library catalogues now incorporate links to external datasets and integrate those datasets in new applications which means that activities like digitization, digital preservation, online resource management, web archiving, text and data mining all create new types of data that libraries both consume and curate (IFLA, 2016). Big data technologies like data virtualization, parallel computing, predictive analytics and machine learning bring the promise of improved performances and smart tools thus empowering libraries to consume and curate data of all kinds in new and innovative ways. Huwe, (2014) in his paper “big data and the library; a natural fit” revealed three key big data projects he thought most likely to occupy librarians; (1)user studies (2) collections use analysis (3) cross-disciplinary comparative studies which he said all lend themselves to using big data. Indeed in the U.S, ten libraries already use a shared big data analytics service that applies fuzzy logic technology to card catalog data to identify usage patterns and trends which are very useful for decision making, planning and accountability (Vizard, 2016).

The Las Vegas-Clark County Library District Foundation uses analytics via CIVIC technologies service to gain a deeper understanding of the demography it is serving. In the same library, big data analytics service uncovered that 76% of the community is made up of 21 district types of households which information has changed both the offline and online resources the library promotes to various segments of the overall community (Vizard, 2016).

Developing taxonomies

Sugimoto, Ding & Thelwall, (2013) reveal that the complexity of data from digitization initiatives, digital research and the social web have created a situation in which scholars are now gaining access to huge quantities of data on an unprecedented scale. Jeanne Holm, Evangelist, Data.gov, U.S. General Services Administration, emphatically agrees that librarians should participate in the process perhaps in regards to developing taxonomies.

Libraries as centers of innovation

According to (Rodgers, 2016), libraries have begun to adopt new innovations such as makerspaces that center the libraries' role as a place of creation and innovation thus addressing SDG goal 9. Hunt Library of North Carolina State University in the United States for instance serves a unique role in its community as a technology incubator in the region with specialized spaces designed specifically for 3-D computing, advanced visualization and gaming research and development. In addition, the Los Angeles Public Library (LAPL) hosted the civic innovation Lab's Immigration Hackthon an initiative where more than 100 programmers, activists, politicians, policy makers, students and residents turned out to "hack away" to create applications and web interfaces designed to help immigrants meet the challenges of naturalization (Warburton, 2016).

In transforming communities by harnessing technology's power, the Institute of Museum and Library Services (IMLS) invested in an e-reader app as well as tools and services to help the public more easily access ebooks and other digital content (Bieraugel, 2013). In advancing digital inclusion through access to ICTs, Literacy Bridge adopted the Talking Book, a "low cost audio computer" in agricultural projects to address literacy and gender gaps by providing women and illiterate farmers, as well as others, with access to information on agricultural technologies on demand (World Bank, 2012). In the area of food security, (O'Connor & Kelly, 2017) acknowledges that a facilitated knowledge management process that utilizes filtered big data can help Small Business Enterprises (SMEs) to overcome the barriers in big data usage because explicit and tacit knowledge can be enhanced when SMEs have access to a facilitated programme that analyses, packages and explains big data consumer analytics captured for instance by a large pillar firm in a food network. This is something that can effectively be done by libraries.

In the field of education, higher education in the drive to respond to calls for greater accountability will look to big data to make the case that it is worth the costs. Due to this, there is a growing interest in crunching circulation numbers, database logins, and other transactional data in order to connect it to student success as evidenced by top grades or positive retention outcomes. In doing so, it has the potential to both improve student learning outcomes and expand access to high quality education opportunities in ways that would have been unimaginable even a decade ago (World Economic Forum, 2014). This is the work that information professionals are good at, for instance Metropolitan Community College has been has been experimenting with big data methods in combination with student analytic tools found in Blackboard analytics to pull out key admission, enrollment and building utilization metrics which are crucial for planning and resource utilization. IFLA, (2016) revealed that the modern digital library has moved beyond its traditional focus on metadata, bibliographic and authority data and now manages or works with a broad set of data types, leveraging an ever expanding set of tools and techniques to do so (IFLA, 2016). Those tools also mean that even traditional data logs can be analyzed to improve the services librarians and libraries offer.

Since government hold vast amounts of data on the general populations, (Young, 2012) on libraries and big data argues that, public libraries which hold the public's trust, even above governments and corporations can help individuals understand this new digital realm by bridging what she sees as a persistent disconnect between the general population and the knowledge of what happens with data collected on them and how it can be used.

Open data and open access initiatives

Libraries and librarians' ability to quickly grasp and gain comfort with new technology trends have embraced open data initiatives geared towards fulfilling goal 4 & 16 (action 10). For instance (Schwartz, 2013) reveals that when President Obama signed an open data executive order, libraries welcomed it enthusiastically. IBMS's data expert Jeff Jonas says that you need to let the data "speak to you" when referring to the ability to analyze vast amounts of data about an aspect of life and be able to establish correlations rather than a continuing quest for elusive causality so as to predict the future which is important for decision and policy makers (Mayer & Cukier, 2013).

Challenges of big data on libraries in developing countries

Big data poses serious security threats to individuals, companies and even governments because it involves collection of personal data and information. Sabiti reveals that data protection and privacy, important elements of big data are still underdeveloped in most developing countries like Africa. Most countries still do not have Data protection and privacy laws in place and given that most governments are hybrid regimes with authoritarian and semi-democratic tendencies, there is a danger that big data may be exploited to the detriment of rights of citizens (Sabiti, 2016).

Data curation and processing are also a challenge because of poor infrastructure especially in most developing countries like Africa. Hilbert, (2013) argues that, while an unprecedented amount of cost-effective data can be exploited to inform decision-making in areas that are crucial to many aspects of development, such as health care, security, economic productivity, and disaster and resource management, among others; and the extraction of actionable knowledge from the vast amounts of available digital information seems to be the natural next step in the ongoing evolution from the “Information Age” to the “Knowledge Age”; on the other hand, it runs through a slow and unequal diffusion process that is compromised by the lack of infrastructure, human capital, economic resource availability and institutional frameworks in developing countries which inevitably creates a new dimension of the digital divide.

Scholars such as (Greyling & Zulu, 2010; Kwanya, 2014) reveal that African libraries and information centers are poorly equipped to make a meaningful contribution to the current global digital knowledge economy. In addition, real time monitoring initiatives involve partnerships between the state, civil society, donors and the private sector whose varying interests often result in differences in understanding objectives, in adoption of specific technology-driven approaches since profit-making is a part of the equation for some partners.

It is also reported in (Schwartz, 2013) that the kind of expertise needed to manage data are just beginning to emerge from within librarians’ ranks. On the other hand, Kwanya, (2014) argues that in spite of the many challenges libraries face in their efforts to support implementation of Vision 2030, their greatest impedance seems to be the laid-back and passive attitude of librarians. This could be a combination of issues ranging from lack of motivation in all its forms, the nature of government policies on the role of libraries that disconnects libraries from being active participants in government initiatives, financial constraints that hinder information literacy training programs and public relations/community outreach programs rendering libraries to remain passive.

Conclusion

From the literature reviewed, it is clear that although big data has great potential to contribute to the realization of SDGs, its implication on the role of libraries has yet to be appreciated in scholarly literature. There is inadequate academic and scholarly literature on how big data affects the role of libraries in the global development agenda yet the implications of this data revolution on libraries cannot be denied since libraries are always at the center of provision of access to information and knowledge that is required to drive nations' development agendas. However, it is also clear that libraries and information professionals as early adopters of technology are uniquely suited to deliver the most valuable resource "information and knowledge" that drives decisions for sustainable development. Literate reveals a gap between the developed world and developing countries in terms of big data initiatives uptake with libraries in developed countries more engaged in big data initiatives because big data is dependent on hardware and software for storage and analysis yet technology infrastructure in developing countries like Africa is still underdeveloped. This necessities cooperation among all stakeholders in collection, developing tools and strategies that allow the use of big data for attainment SDGs. Literature also indicates that the kind of expertise needed to manage data are just beginning to emerge within librarians' ranks which means that there is need for continuous professional development.

Recommendations

Building partnerships

African libraries should partner with technologists in investigating approaches to build trust and privacy adequately into big data technology focusing on striking the delicate balance between the people's right to privacy and the need to extract additional knowledge, patterns and value from personal data. In addition, big data is dependent on hardware and software for storage and analysis yet technology infrastructure in developing countries like Africa is still underdeveloped so there is need for cooperation among all stakeholders in collection, developing tools and strategies that allow the use of big data for attainment SDGs.

Aggressive campaigns and advocacy

Librarians in the developing countries, in particular those in Africa have always stated that governments do not take them and their work seriously as they deserve (Ojo, Sotunsa, & Traore, 2016). The modern librarianship demands change in information professionals' philosophy and practices to cope with the demands of big data deluge. For this reason, libraries information professionals need to play an aggressive role in being change agents. By demonstrating the contribution libraries make across the goal framework through campaigns and meetings with government officials, libraries will be in the best position to partner with government and others to implement national strategies and programmes that benefit the user communities. Libraries are known to be organs that have public trust so they should intensify their advocacy for freedom of access to information balanced against protecting human privacy. Libraries will be able to identify, select, and acquire large datasets of valuable information without cost or copyright restrictions.

Implement big data and open data policies

Laws and policy framework governing use of big data are not yet implemented in some countries even where they exist especially in Africa, they are not functional. Librarians have always remained custodians of data, so they can become essential partners for metadata standards, metadata creation, preservation and managing the whole information life cycle. However, there is there is need for policy reform to address the issues that have come up due to advances in information technology in particular, big data revolution. So governments especially those in developing countries like Africa should proactively implement open government initiatives jointly involving information professionals to allow people access government information in real time.

Continuous professional development

As librarians are increasingly involved in promoting and supporting the sharing of open data, managing repositories and curating research data, professional development will need to keep up. This requires continuous study and research by information professionals to upgrade and update skill sets required for the new roles such digital archivists, data curators and other types of librarians who need to advise their organizations on storage and accessibility of big data sets.

Review and upgrade Library and Information Science curriculum

Therefore there is need for reviewing the current Library and Information Science Curriculum (LIS) curriculum in LIS schools in developing countries especially Africa to ensure LIS graduates who have not only the technological skills but also the policy perspective that views data as a collection.

References

Amunga, H. A. (2011). Information literacy in the 21st century universities: The Kenyan experience.

Banisa, D. (2015). *Access to Information Central to the Post-2015 Development Agenda.* International Federation of Library Associations & Institutions.

Bays, J. (2014). *Harnessing Big Data to address the world's problems.* Retrieved January 20, 2017, from http://voices.mckinseyonsociety.com/harnessing-big-data-to-address-the-worlds-problems/

Bell, S. (2013). Promise and problems of big data. *Library Journal*.

Bieraugel, M. (2013). *Keeping up with big data*. Retrieved January 2, 2017, from Association of College and Research Libraries: http://www.ala.org/acrl/publications/keeping_up_with/big_data

Boyd, D., & Crawford, K. (2012). Critical questions for big data: Provocations for a cultural, technological and scholarly phenomenon. *Information, Communication & Society, 15*(5), 662-679.

Bradley, F. (2016). A world with universal literacy: The role of libraries and access to information in the UN 2030 agenda. *IFLA Journal, 42*, 118-125.

Chen, C. P., & Zhang, C.-Y. (2014). Data-intensive applications, challenges, techniques and technologies: A survey on big data. *Information Sciences, 275*, 314–347.

Chen, H., Chiang, R. H., & Storey, V. C. (2012). Business intelligence and analytics: From big data to big impact. *MIS Quarterly, 36*(4), 1165-1188.

Chigbu, E., & Nkechi, A. I. (2013). The role of academic libraries and librarians in knowledge management and the realization of vision 20:20:20 in Nigeria. *Academic Journals, 5*(10), 351-361.

Chunara, R., Andrews, J. R., & Brownstein, J. S. (2012). Social and news media enable estimation of epidemiological patterns early in the 2010 Haitian cholera outbreak. *The American journal of tropical medicine and hygiene, 86*(1), 39-45.

Cisco. (2016). *Global Mobile Data Traffic Forecast Update 2015–2020*. Retrieved October 26, 2016, from http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/mobile-white-paper-c11-520862.html

De Mauro, A., Greco, M., & Grimaldi, M. (2016). A formal definition of Big Data based on its essential features. *Library Review, 65*(3), 122-135.

Diebold, F. X. (2012). *On the Origin (s) and Development of the Term'Big Data'.* University of Pennsylvania, Department of Economics. Philadelphia: SSRN.

Echezona, R. I., Ozioko, R. E., & Ugwuanyi, C. F. (2011). Public library intervention in conflict resolutions in the iger Delta region of Nigeria: Librarian's perspectives. *International Journal of Library and Information Science, 3*(2), 98-106.

Elbert, M., Fuegi, D., & Lipeikaite, U. (2012). Public libraries in Africa - agents for development and innovation?: Current perceptions of local stakeholders. *IFLA, 38*(2), 148-165.

Fourie, I., & Meyer, A. (2016). The role of libraries in developing and informed and educated nation. *Library Hi Tech, 34*(3), 422-432.

Frederick, D. E. (2016). Libraries, data and the fourth industrial revolution (Data Deluge Column). *Library Hi Tech News, 33*(5), 9-12.

Gandomi, A., & Haider, M. (2015). Beyond the hype: Big data concepts, methods, and analytics. *International Journal of Information Management, 35*(2), 37-144.

Global Pulse. (2016). *Measuring Poverty with Machine Roof Counting*. Retrieved October 26, 2016, from United Nations Global Pulse: http://www.unglobalpulse.org/projects/measuring-poverty-machine-roof-counting

Greeley, M., Lucas, H., Chai, J., & Cummins, M. (2013). Introduction: real time monitoring for the most vulnerable–investing in common guidance for equity and quality. *IDS Bulletin*, *44*(2), 1-14.

Greyling, E., & Zulu, S. (2010). Content development in an indigenous digital library: A case study in community participation. *IFLA, 36*(1), 30-39.

Hancke, G. P., de Carvalho e Silva, Bruno, & Hancke Jr, G. P. (2013). The role of advanced sensing in smart cities. *Sensors, 13*(1), 393-425.

Heidorn, B. P. (2011). The emerging Role of libraries in data curation and E-science. *Journal of Library Administration, 51*(7-8), 662-672.

Hilbert, M. (2013). *Big Data for Development: From Information to Knowledge Societies.* United Nations Economic Commission for Latin America and the Caribbean.

Hope, R., Foster, T., Money, A., & Rouse, M. (2012). Harnessing mobile communications innovations for water security. *Global Policy, 3*(4), 433-442.

Hoy, M. B. (2014, July). Big Data: An itroduction for Librarians. *Medical Reference Services Quarterly, 33*(3), 320-326.

Huwe, T. (2014). Big data and the library: A natural fit. *Computers in Libraries, 34*(2), 17-18.

IBM. (2013). *Data driven healthcare organisations use big data analytics for gains.* Retrieved from http://www-03.ibm.com/industries/ca/en/healthcare/documents/Data_driven_healthcare_organizations_use_big_data_analytics_for_big_gains.pdf

IFLA. (2012). *How Libraries contribute to sustainable development & the SDGs: impact report.* International Federation of Library Associations & Institutions.

IFLA. (2013). *Access to Information Central to the Post-2015 Development Agenda.* Retrieved October 15, 2016, from IFLA.

IFLA. (2014). *The Lyon Declaration Tackles Information Access and Sustainable Development.* Retrieved October 26, 2016, from Information Today: http://www.lyondeclaration.org/content/pages/lyon-declaration.pdf

IFLA. (2015). *Access and Opportunity for All: How Libraries Countribute to the United Nations 2030 Agenda* . International Federation of Library Associations and Institutions (IFLA).

IFLA. (2016). *Data In Libraries: The Big Picture*. Retrieved January 2, 2017, from The University of Chicago Library: https://www.lib.uchicago.edu/conferences/ifla2016-data-in-libraries/

International Council for Science (ICSU). (2014). *Open data in a Big Data World* (Vol. Abr. Version). Paris: International Council for Science (ICSU).

Kayode, D. S. (2016). The role of the library in achieving Vision 2030 Goals. *CEC Journal, 4*(2), 1-5.

Kelley, M. (2013). Boston University Libraries Pushing Forward With Alma Platform. *Library Journal*.

Kitchin, R. (2014). The real-time city? Big data and smart urbanism. *Geo Journal in SpringerLink, 79*(1), 1-14.

Kloeckl, K., Senn, O., & Ratti, C. (2012). Enabling the real-time city: LIVE Singapore! *Journal of Urban Technology, 19*(2), 89-112.

Koo, D., Piratla, Kalyan, & Mathews, J. (2015). Towards sustainable water supply: Schematic development of big data collection using Internet of Things. *Proceedia Engineering, 118*, 489-497.

Kshetri, N. (2014). The emerging role of big data in key development issues: Opportunities, challenges, and concerns. *Big Data & Society in Sage Publications*, 1-20.

Kwanya, T. (2014). The impact of libraries and information services in shaping Vision 2030 in Kenya. *SCECSAL 2014.* Malawi.

Kwon, O., Lee, N., & Shin, B. (2014). Data quality management, data usage experience and acquisition intention of big data analytics. *International Journal of Information Management, 34*(3), 387-394.

Laney, D. (2001). 3D data management: Controlling data volume, velocity and variety. *META Group Research Note 6*(70).

Lipper, L., Thornton, P., Campbell, B. M., & Baedeker, T. (2014). Climate-smart agriculture for food security. *Nature Climate Change, 4*(12), 1068-1072.

Lohr, S. (2012). The Age of Big Data. *New York Times*, 1-5.

Lucas, H., & Chaudhuri, J. (2013). The RIM Initiative in Vietnam: 'Prioritise rapid results rather than publishable results'. *IDS Bulletin, 44*(2), 40–49.

Mabweazara, R. M., & Zinn, S. (2016). Assessing the appropriation of social media by academic librarians in South Africa and Zimbabwe. *South African Journal of Libraries and Information Science, 82*(1).

Maepa, M. E., & Marumo, K. (2016). *The contribution of the National Library of South Africa towards the achievement of Sustainable Development Goals (SDGs).* Columbus: IFLA.

Maidul, I., & Umme, H. (2015). Use of Social Media in Marketing of Library and Information Services in Bangladesh. *Journal of Library & Information Technology, 35*(4), 299-303.

Mayer, V., & Cukier, K. (2013). *Big Data: A revolution that will transform how we live, work and think.* New York: Houghton Mifflin Harcourt Publishing.

Michael, K., & Miller, K. W. (2013). Big data: Opportunities and new challenges. *IEEE Computer Society*, 22-24.

Miorandi, D., Sicari, S., De Pellegrinia, F., & Chlamtac, I. (2012). Internet of things: Vision, applications and research challenges. *Ad Hoc Networks, 10*(7), 1497–1516.

Namhila, E. N., & Niskala, R. (2013). Libraries supporting national development goals in Namibia. *IFLA Journal, 39*(1), 58-69.

O'Connor, C., & Kelly, S. (2017). Facilitating knowledge management through filtered big data: SME competitiveness in an agri-food sector. *Journal of Knowledge Management, 21*(1).

OED. (2013). *Definition of Big Data*. Retrieved October 26, 2016, from OxfordEnglish Dictionary: http://www.oed.com/view/Entry/18833

Ojo, A., Sotunsa, M., & Traore, K. (2016). Chapter one expressions of indigenous and local knowledge in Africa and its diaspora: An introductory perspective. *Expressions of Indigenous and Local Knowledge in Africa and its Diaspora*, 1.

Papadopoulos, T., Gunasekaran, A., Dubey, R., Altay, N., Childe, S. J., & Fosso-Wamba, S. (2017). he role of Big Data in explaining disaster resilience in supply chains for sustainability. *Journal of Cleaner Production, 142*(2), 1108–1118.

Peet, L. (2015). *President Obama Announces New Library Initiatives.* Retrieved January 2, 2017, from Library Journal: http://lj.libraryjournal.com/2015/04/youth-services/president-obama-announces-new-library-initiatives/

Price, T. (2013). Big data and privacy. *CQ Researcher, 23*(38), 909-932.

Raghupathi, W., & Raghupathi, V. (2014). Big data analytics in healthcare: promise and potential. *Health Information Science and Systems, 2*(3), 1-10.

Rambo, N. (2015). *Research data management: Roles for Libraries.* ITHAKA S+R.

Rodgers, E. P. (2016). James B. Hunt Jr. Library | New Landmark Libraries 2016 Winner. *Library Journal - Designing for the Future*.

Sabaratnam, J. S., & Ong, E. (2016). Singapore libraries: From bricks and mortar to information anytime anywhere. *IFLA Journal, 39*(2), 103-120.

Sabiti, B. (2016, August 1). *A short History of Uganda's ICT Revolution and the Law of Unintended Consequences.* Retrieved October 26, 2016, from Open Development Data – Uganda: http://blog.opendevdata.ug/

Sabiti, B. (2016, April 20). *The potential and limits of Big Data in Africa.* Retrieved October 26, 2016, from http://blog.opendevdata.ug/

Schwartz, M. (2013). What Governmental big data may mean for libraries. *Library Journal*.

Science International. (2015). *Open Data in a Big Data World* (Extended Version ed.). Paris: International Council for Science (ICSCU).

Siedner, M. J., Lankowsk, A., Tsai, A. C., & Muzoora, C. M. (2013). GPS-measured distance to clinic, but not self-reported transportation factors, are associated with missed HIV clinic visits in rural Uganda. *Pub Med Central, 27*(9).

Simo, H. (2015). *Big Data: Opportunities and Privacy Challenges.* Darmstadt: Fraunhofer-Institut für Sichere Informationstechnologie.

Sugimoto, C. R., Ding, Y., & Thelwall, M. (2013). Library and Information Science in the Big Data Era: Funding, Projects, and Future. *Proceedings of the American Society for Information Science and Technology, 49*(1), 1-3.

Tien, J. M. (2013). Big Data: Unleashing information. *Journal of Systems Science and Systems Engineering, 22*(2), 127–151.

Tilly, C. (1980). *The old new social history and the new old social history: CRSO Working Paper No 218.* Michigan: University of Michgan.

UNDP. (2016, July 28). *The Sustainable Development Goals.* Retrieved October 26, 2016, from United Nations Development Programme: http://procurement-notices.undp.org/view_notice.cfm?notice_id=31577

United Nations. (2015). *Global Pulse Annual Report 2015.* New York: United Nations.

United Nations. (2015). *Transforming the World: the 2030 Agenda for Sustainable Development (UN 2030 Agenda).* New York: United nations.

United Nations. (2016). *Contribution of Libraries to the SDGs*. Retrieved October 15, 2016, from Partnerships for SDGs - United Nations: https://sustainabledevelopment.un.org/partnership/?p=10909

United Nations Capital Development Fund (UNCDF). (2016, October 3). *Data, big data and economic development in Uganda*. Retrieved October 26,

WEB BASED STUDENT INFORMATION MANAGEMENT SYSTEM IN UNIVERSITIES: EXPERIENCES FROM MZUZU UNIVERSITY

Symon C. Lubanga
Research Assistant
Department of Library and Information Science Mzuzu University, Mzuzu, Malawi

Winner Dominic Chawinga
Lecturer, Department of Library and Information Science
Mzuzu University, Mzuzu, Malawi

Felix Majawa
Senior Lecturer, Department of Library and Information Science
Mzuzu University, Mzuzu, Malawi

and
Sellina Kapondera
Lecturer, Department of Library and Information Science
Mzuzu University, Mzuzu, Malawi

Abstract

Over the past few decades, universities all over the world have been experiencing new paradigms in the way they handle and manage students' information due to the proliferation of ICTs and its applications such as web-based student information systems. With the adoption of such systems as the Online Student Information System (OSIS) in academic institutions, the experience is that it has now become easy to harness and fast track all students' records in one centralized database via the internet technology. While the benefits of OSIS seem to be cerebrated, it has been a hustle for most universities in Africa to completely go digital in their operations due poor ICT infrastructures that seem to be prevalent in the region. In Malawi, a social survey was conducted with the aim of assessing the Mzuzu University Student Online Management System (SOMS) from the perceptive of students. The study applied the principles of both qualitative and quantitative research approaches. The principal data collection methods were questionnaires and follow up interviews. The study population was made up of third year students in the Faculty of Information Science and Communications and the Director of ICT services at Mzuzu University. The quantitative data collected were analysed and presented using Microsoft Excel Package. Thematic analysis technique was used to analyse the data collected through interviews. The study revealed that Mzuzu University SOMS has one prime service which is online registration and admissions, with online examination results access, student profile and finance as add-ons. The system benefits students as it has cut the time spent during registration periods in every new semester. Students faced the following major challenges when using the system; server loads as more students *concurrently use the system, high cost of internet data bundles and charges, lack of system regular updates and high cost of password recovery. The study recommends that the university through the ICT Directorate should consider addressing the various issues impeding the effective use of the system amongst the student community*

Keywords: *Students Online Management System, Mzuzu University, Malawi*

Introduction

Swift transitions in the way institutions of higher learning handle and manage students' information are brought about through technological revolutions, perhaps with the emergence of online student management systems. The concept of Student Management System (SMS) is within a larger field of Information Systems (IS) and it dates back as far early as 1960s (Evangelista, 2011; Marrero, 2009 & Swartz, 2007). Broadly defined, an SMS is "a general information system for maintaining and providing student information and it almost exists in all the schools, colleges, universities and any other education institutions" (Pan, 2004, p.3). Nowadays, SMSs have been described variously as: Student Information Systems (SIS), Student Management Information Systems (SMIS), Student Data Systems (SDS), Student Data Warehouse (SDW), Student Academic Information Systems (SAIS), or Student Information Management Systems (SIMS), Online Student Information System (OSIS) and Student Academic Register Information System (SARIS), (Kaloki, n.d; Maere, 2011 & Paulsen, 2002). Kasozi (2006) noted that despite having various nomenclatures, these information systems serve a similar function and they are all connected to the management of students' information or records in universities or other educational institutes.

In the pre-digital age, managing student's information was done manually, using paper-based systems. However, with increasing number of students in educational institutes, the system could no longer handle student's records effectively. Suffice to say, the dawn of ICT applications and databases presented unparalleled opportunities in managing students' records in academic institutions which gradually lead to the disappearance of paper-based systems. The major concern with manual systems has been the speed with which business operations and decision making processes are carried out in education institutions. Consequently, to cope up with the rise in student's enrolment whilst at the same time ensuring efficiency in their operations, universities had to experience a paradigm shift from using manual student's management systems to online student management systems. Pan (2004) explains that Students Management Systems (SMS) whether manual or online are there to maintain and provide student information in universities and colleges. While specifically, online student information systems depict a centralized virtual database where all information pertaining students are properly stored in an educational institution (Pacio, 2013). Principally, it is used for management of the most pivotal information about entities such as students, faculty, courses, applications, admissions, payment, exams, and grades (Paulsen, 2002).

Bharamagoudar, Geeta and Totad (2013) opines that an effective SMS provides a simple interface for maintenance of student information. It can be used by educational institutes or colleges to maintain the records of students easily. Thus the creation and management of the most accurate, up-to-date information regarding a students' academic career is of ultimate value to universities as well as colleges. The understanding is that managing student's records manually comes with a lot of challenges. For instance, most of the times information is littered everywhere, can be redundant, inconsistent and collecting relevant information may be very time consuming (Pacio, 2013) as cited in Richard (2004). This development accelerated an automatic switch to online-based student management systems in most universities across the world with the purpose of maximising the benefits from its effectivity to acquire, process, store and retrieve information from the Internet.

Context of the study

Mzuzu University was officially opened in 1999 as the second public University in Malawi after its establishment by the Act of Parliament in 1997. It is located along the Mzuzu-Karonga Main road and is about few kilometres away north of Mzuzu City in the Northern Region of Malawi. The principal mission of Mzuzu University is "to provide high quality education, training, research and complementary services to meet the technological, social and economic needs of individuals and communities and the world". It also centres on the values of "Service, Self-reliance and Perfection" (Mzuzu University Annual Report, 2014). Until recently, Mzuzu University offers both undergraduate and Post-graduate academic programmes to both local and international students. The university as it stands has five faculties and five centres (Student Handbook, 2010). It started with the faculty of Education in 1999, and the following other faculties were later introduced; Faculty of Hospitality Management and Tourism; Faculty of Health Sciences; Faculty of Information Science and Communications (FOISC) and Faculty of Environmental Sciences. The University also has five Centres namely; Centre for Open and Distance Learning (CODL), Centre for Water and Sanitation, Centre for Security Studies Centre for Inclusive Education and Testing and Training Centre for Renewable Energy and Technologies (TCRET). Currently, Mzuzu University (MZUNI) enrolls more than 4000 students in each academic year (Mzuzu university 18th Congregation special report, 2017).

Statement of the problem

The way universities all over the world manage student's information have drastically changed and evolved together with the advent and proliferations of

ICTs. Pacio (2013) argues that changes in Information Technology (IT) allow schools to utilize databases and applications such as Online Student Information System (OSIS) thus, making the accessing of records centralized. However, the establishment of online student's management systems in institutions of higher learning like Mzuzu University posits both opportunities and challenges; to some extent, it remains a half way barrier to some users as they call the electronic machinery a tough game, difficult to cope up with, hence they still remain adamant to effectively utilize the benefits of a new system. At the same time, ensuring a complete migration to such an online student management system seems not possible and raises a lot of concerns among students considering issues such as slowness of broadband internet connectivity the campus is currently experiencing. More so, students are required to access the Student Online Management System (SOMS) from their homes or off-campus where the Internet might be available, slow or very expensive. Consequently, the researchers also observed some irregularities with the new system, for instance timely access to examination results seemed to be a big challenge in addition to registration process which was already forcing some students to pay late registration fees due to failure to go with system. Usually, since the inception of the Mzuzu University SOMS in 2015, there has been no any empirical study to track down its progress in terms of benefits and challenges-let alone the current study address this gap by assessing the system's effectiveness to students. The following objectives were formulated to help address the research problem:

- To identify services offered by the Online Student Management System at Mzuzu University.
- To find out the benefits of an Online Student Management System as perceived by students at Mzuzu University.
- To identify challenges that student's face when using the Online Student Management System.

Literature Review

At the core of every system's efficiency is the availability of services because very often users rate the whole system performance depending on the satisfaction they get in using such services. To meet users' needs and expectations, almost every online student management has a myriad of services. For instance, Maere (2011) explains that the SMS handles the administration part of students which includes; admission, examination records, assessment process, finance, room allocation, transcripts, students union electronic voting, mobile text messaging, examination results feedback. Therefore, it is certain that in most institutions of higher learning, online student management systems are created in house to assist in registration of students, student online profiling, financial recording, examination grades records, transcript generation, student accommodation management, and keeping student records (Maere, 2011; College of Medicine (CoM), 2016 & Mzuzu University Annual Report, 2015).

Asogwa, Mohammed, Ahmed & Danmaitaba (2015) explains that the benefits of Student Management (SMS) software are enormous. In most universities, SMSs directly benefits both the administration and students. To the university management, the SMS carries most of the crucial administrative activities such as admissions, enrolment, and examination (Asogwa et al, 2015; Kaloki, n.d; Kasozi, 2006). On the other hand, Pacio (2013) argues that in recent years, the use of online student information systems provides students with the capabilities to register for new semesters and have timely access to their academic and biographic records via internet enabled gadgets like smartphones and computers. Similarly, EBriks Infotech (n.d) noted that students gain the most from School Management System. Preferably, students get a new platform not only to gain but also to express the knowledge inside them. It was observed that the key benefits of SMSs to students revolves around the 24/7 web-based access to information about class and examination timetables, school events and holidays. It was further ascertained that SMSs allows users to publish articles to share experience, knowledge and views, and participate in discussion forums and therefore this contributes to the digital library.

Asogwa et.al (2015) observed that despite revolutionizing the student information systems, universities in their administrative or academic transaction services, and maintaining student's academic history and profile, paper work is still going on concurrently. Furthermore, Igweonu (2013) also pointed out that inconsistency in power supply, inadequate funding during implementation, inadequate technicians for computer maintenance, and limited access to internet are some of the challenges that locks most universities in the use of Online Student Information Systems.

Methodology

A social survey research design was used in this study. In nature, the study applied the principles of both qualitative and quantitative research approaches. The study population was comprised of students from the faculty of information science and communications and the Director of ICT services at Mzuzu University. In 2016, MZUNI enrolled 4,067 students (Mzuzu University 18th Congregation special report, 2017, p.5), and the sample for this study was composed of 17 Library and Information Science Students and 20 ICT third year students making a total of 37 respondents. The study used non-probability sampling procedures, specifically purposive sampling. Questionnaires and follow up interviews were used to collect data from the purposively selected 37 third year students in the FOISC and the Director of ICT respectively during the data collection process. To add meaning to the data collected from participants, the researchers analyzed it into tables, frequencies, percentages and figures using such a package as Microsoft Excel application. Qualitative data collected were analyzed through the process called thematic analysis. In this process, Braun & Clarke (2006) explains that it is a method which involves identifying, analyzing and reporting patterns (themes) within data. The researchers interpreted the interview data in the way that it directly answered the set forth thematic areas or objectives of this study.

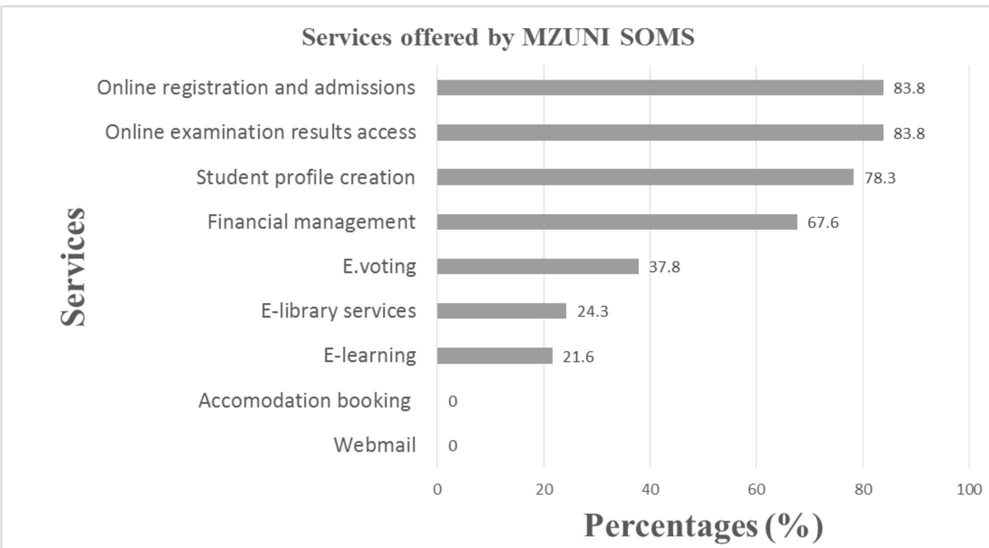
Findings

The researchers distributed thirty seven (37) questionnaires to students in the Faculty of Information Science and Communications, of which every respondent returned the questionnaires, denoting 100% response rate. Of the 37 respondents who took part in the study 26 (70.3%) were males while 11 (29.7%) were females. This shows that there are more male respondents than females. In terms of departmental affiliation, 17 (45.9%) respondents were from the Library and Information Science department whereas 20 (54.1%) respondents came from the department of Information Communication and Technology. Additional information, views and opinions as regards to the use of SOMS were also sought from the Director of ICT services through interviews. The following section presents and discusses the findings of the study:

Services offered by the Online Student Management System at Mzuzu University

Well-designed student information management systems support a lot of functionalities and serves as the gateway to the University's academic operations through the Online Student Portals (OSP) as the component of the system for the students (Secreto, 2015). Figure 1 shows services that students access when using the Mzuzu University Student Online Management System.

Figure 1: Services offered by the MZUNI SOMS (N=37)



From Figure 1 above, two services; online registration and admissions and online examination results were the most selected services by the student respondents with scores of 31 (83.8%) each. The second most selected service was student profile creation with a score of 29 (78.3%). Financial management had 25 (67.6%) selections, e-voting was selected by 17 (37.8%) respondents, e-library services by 9 (24.3%) respondents and e-learning was selected by 8 (21.6%) respondents. No respondent indicated on accommodation booking and webmail services. The results mean that the MZUNI SOMS mostly provides four services namely; online registration and admission, exam results access, financial management and student profile creation. Follow up interviews with the Director of ICT also indicate online registration and admission as a principle services with all these others as add-ons to the system. The results of the study correspond to other prior studies in the field. For instance, many studies highlights that most of these systems support routine transactions like admissions, enrollment, examination management and financial management (Evangelista, 2011; Kaloki, n.d; Maere, 2011; NCS Pearson, 2001; Pacio, 2013 & Secreto, 2015).

Gadgets or devices used to access the student online management system

Respondents were presented with two sets of gadgets or devices that they use in accessing the online student information system. The questions were set to find out which set of gadgets or devices do students use to access the SOMS when they are off-campus/Home and/or On-campus. Results showed that when they are at home or off-campus, students accessed the online student information system through smartphones with a score of 32 (86.4%) while on campus, 34 (92%) respondents use computers in university laboratories. The researchers suggest that when on campus students prefer accessing the online student information system in university computer laboratories because it is free of charge to all students. While the prevalent use of smartphones to access the SOMS at home simply shows it is the device that is most convenient to them, to some extent cheaper than other means like the public Internet Cafes when off-campus.

Other devices or gadgets commonly used by respondents when off-campus includes; personal desktop computers/laptops which registered a score of 17 (45.9%) among the respondents, those who use the Internet cafes to access the SOMS were 4 (10.4%) and only one (2.7%) of the respondents accesses the system via an iPad. Basic phones also showed a lesser percentage in use when accessing the SOMS at home that is it is only used by 3 respondents, representing 8.1%.When on university campus, most students 25 (67.6%) also access the SOMS through their smartphones. Nineteen (51.4%) respondents use their personal computers/laptops in accessing the SOMS, then library computers in the Internet room are only used by 16 (43.2%) respondents. iPads are used by 2 (5.4%) respondents to have access to the SOMS alongside basic phones which also registers the same number and percentages as iPads.

Benefits of the Student Online Management System

The ever-growing use of ICTs and its applications such as the OSIS in academic institutions have come along with numerous benefits to the school management, academic staff as well as students. Generally, in this paper the researchers wanted to know the benefits that the Mzuzu University student online management system offers to the student community. The study revealed that all students (100%) agreed that the main benefit of the Mzuzu University Student Online Management System is that is has cut the time spend during registration in every semester. The results on the benefits of the MZUNI SOMS to students are presented in Table 1 below;

Table 1: Benefits of the student online management system to students *(N=37)*

Benefits of the SOMS to students	***F***	**%**
Less time spent during registration in a new semester	37	100
Timely access to examination results	36	97.2
I can easily check my financial statements (i.e.; fees balances)	33	89
It is easier to add and/or drop new or wrong courses respectively in each semester	30	81
Provide access to various files (i.e. results transcripts, courses, student handbook, university prospectus, MZUNI annual reports, lecturer's handouts)	22	59
24/7 access to the contents of e-library	8	22
Paying registration fees through a secured web access	5	14
Easy communication with lecturers and university management via a webmail feature.	1	2.7
Participation in online discussion forums	1	2.7

Many respondents 36 (97.2%) also agree that the system speeds up access to examination results. While 33 (89.1%) indicated that the system helps them check financial statements. Thirty (81%) respondents indicated that the online registration sub-portal in the system allows them to easily add and/or drop new and wrong courses respectively in each semester. Twenty-two respondents representing 59.4% of the study population indicated that the system provides access to various files (i.e. results transcripts, courses, student handbook, university prospectus, MZUNI annual reports, lecturer's handouts) as a benefit. Eight respondents representing 21.6% were certain that the student online system allows them to have 24/7 access to the contents of the e-library. A follow up interviews with the Director of ICT also confirms that the benefits of the MZUNI SOMS revolves around less time spent during registration to students, timely access to examination results, easy checking of financial statements and access to various academic files.

Similar to these results are the findings of the study conducted by Pacio (2013) who reckons that through online student's information systems, students may view pertinent school information in their respective programmes of study, have access to their academic and biographic records as well as the ability to update their personal profiles and register for classes. However, these findings seem to be different from other previous studies (EBriks Infortech, n.d, Kasozi, 2006 & Kaloki, n.d). It is said that online student information systems provide access to the contents of e-libraries, students use the OSIS to contribute the contents of e-library and it provides liberty to publish articles and views, and participate in discussion forums or platforms.

Challenges Students face in using the Student Online Management System

In any developing country like Malawi, the use of web-based student information systems could not go without challenges. Typically, the researchers were highly motivated to conduct a study on the assessment of the MZUNI student online management system upon hearing a lot of complaints from the student community that the system posits a lot of challenges to them. From the viewpoint of both students and the director of ICT at Mzuzu University, it is clear that the student online management system catapults a myriad of challenges to the student community. The findings of the current study revealed that 31 (83.8%) respondents experience slow internet connectivity when accessing the student online management system. While 30 (81.1%) respondents said that suffer server loads due user congestions as more students concurrently access the system especially during the times of online registration and online examination results access. All these problems seem to originate from the poor bandwidth of internet connections. It appears the problem of poor bandwidth is persistent in Malawi because Chawinga and Zozie (2016) and Chawinga and Zozie (2016b) have previously reported about a similar problem. On this, Okoye (2015) also says that this challenge is a result of smaller bandwidth of campus internet network compared to the overwhelming number of users. He emphasizes that even if the network may be good, it becomes poor when used by many users at a time and he attributed this overloading of servers due to user congestions to Internet Service Providers (ISP) and slow speed processing capacity of servers.

In addition, the study shows that high cost of Internet data bundles was a challenge cited by 24 (64.8%) respondents. In Malawi, the cost of internet data bundles and charges are very high and this affects students in accessing the SOMS using the mobile phones. Precisely, the World Bank accounts that the retail price of an entry level mobile broadband package (500 MB per month of data) is equivalent to 24.4% of Gross National Income (GNI) per capita, while a fixed connection exceeds 111%, 46 compared with the United Nations (UN) broadband

Commission affordability target of 5% or lower. In a recent national survey, affordability was cited by 55% of citizens as the main barrier to internet access. Other challenges include eminent in the study includes: forgetting usernames indicated by 24 (64.8%) respondents; high costs of password recovery indicated by 21(56.7%) respondents; lack of system regular updates was indicated by 20 (54.1%) respondents; lack of basic computer literacy skills 15 (40.5%); browser incompatibility 13 (35.1%); frequent power outages/blackouts 10 (27%) and the system is complex to use was a challenge to 9 (24.3%) respondents.

Suggestion on dealing with the challenges

Students were given a chance to suggest solutions to the challenges that they face when using the web based student information system. The question in this section was open ended, which sought students' opinions and suggestions on what the university do to improve the efficiency of the system and a thematic analysis of the results is presented in Table 3 below:

Table 2: Solutions to the challenges (N=37)

Challenge (s)	Suggested Solution (s)
Lack of personal information privacy and confidentiality in the system	Twenty-four (64.8%) said that the exams results graph in the system is not confidential, it infringes on their personal privacy. Therefore, it was suggested that the exams performance graph should be completely removed or should only appear inside the main view of the results not on every page or else it should be positioned at a more secure and private place, not live on every page as it is now. This is seen in the opinions that students were giving; "*they should improve on the results access, like when viewing the performance graph, it must be at least confidential"*QR10-LIS Another respondent wrote *"the graph of the results on the system does not show any privacy at all, hence in my opinion it should be removed on the front page and be put somewhere else than there"* QR37-ICT *"results graph should not appear on the wall, it should be a bit private, 'cause we use ICT labs, and people there are congested"*QR4-LIS
The system is not updated regularly	Seventeen respondents, 29.7 % of the study population were of the opinion that the system should be updated regularly to incorporate new features and that some features of the system that do not work, should start working. One respondent opinionated that *the system should be updated regularly so that some features that*

	don't work e.g.; continuous assessment results must start working. Also a webmail feature should be incorporated in the system. It would also be very important if e-learning, e-library services, online voting, accommodation booking features are also embedded in the system" QR18-ICT
Slowness of the internet connectivity	Thirteen (35.1%) respondents proposed the establishment of a speedy WI-FI or internet connection on campus with a larger bandwidth to address issues surrounding the erratic network connections in the campus
High cost of passwords recovery	Five (13.5%) research participants were against the issue of paying money to have their passwords reset once forgotten. They asked the university to consider endorsing a free and automatic reset of passwords amongst the student community.
Limited number of university computers and ICT laboratories	Three (8.1%) respondents suggested that the university should procure more computers and extend the computer laboratories to other rooms to accommodate large number of users of the system especially during the time of registration and examination results access.
Few ICT personnel in the ICT Directorate	One respondent expressed the need for the university to employ more ICT personnel to help in addressing the concerns of students pertaining to the use of the system and in addressing system errors. One respondent said; *"it should employ more ICT personnel to reduce workload. Students wait for a long time to have their issues resolved since there is only one ICT staff serving the whole community (when dealing with system errors)* QR12-LIS
Long queues in the finance department to have student online accounts activated	Two research participants (5.4%) raised concerns over standing on a long queue in the finance department to have their fees balances cleared, and have their students' online accounts activated before proceeding to the registration process. Instead, they suggested that once a student has paid fees in a bank and has no balance, the student online account should be automatically activated via a direct link that can connect these accounts via an integrated database. One of these research participants wrote *"since we are using online payment of school fees, we don't need to stand a long queue waiting for the bank receipt to be activated by the admin after the bank services, it should be a direct link*" QR33-ICT

Frequent power outages	Finally, one respondent had a view that to solve the problem of intermittent electrical power, the university should consider procuring reliable generators, that will enable electrical power present around the clock which will also imply the 24/7 access to the system among students. The respondent wrote: *"the university should procure Gen-sets/generators as there is frequent power outages blackouts"* QR14-LIS

Conclusion

In technology driven world, web based student information systems play a very important role in meeting the requirements of sound and effective management of students' information and/or records in academic institutions. Today, the presence of online student information systems is not only a symbol of modernity in universities but an evolution that has simplified the process of managing student data and records. While at the same time, these systems facilitate the seamless transfer of information between students and the university management with the aid of internet technologies. This paper has brought into limelight that Mzuzu University student online management system has eased the registration process and it also speeds up the access to online examination results amongst the student community. Conflicting views from students also indicates that even though the online student information system was adopted and implemented, it is still in its mid way of growth due some challenges that reflects on the poor state of ICT infrastructural development at the institution. Therefore, investing in ICTs to improve on poor network bandwidths and having fully fledged modern information and communication facilities can help to ensure full utilization of the system by students. Meanwhile, there is sign of improvements in business operations at the institution since the inception of the student online management system, as such this paper calls for adding new services in the system to make it all encompassing and to meet the diverse needs of the student community.

Recommendations

The various issues that emanated during the survey have prompted the researchers to put forward the following recommendations which could further make the student online management system more effective and efficient to its students:

- The ICT Directorate with financial assistance from the university should upgrade their servers and increase the Random Access Memory (RAM) of the system to deal with the problem of server loads due to user congestions. At the same time, it is important that registration process should not have deadlines, instead it should be done in phases or else students should start registering when they are at home.

- Introduction of new services in the Student Online portal. New services such as e-learning, e-library services, webmail, online discussion forums, online voting and accommodation booking should be incorporated into the system to meet the needs of students.
- Since most students access the system using computers in university laboratories and library internet room, it is recommended that the university to procure more computers and extend laboratories to other rooms to accommodate the ever increasing number of students at the campus.
- Finally, accessing the SOMS in open space computer laboratories has raised privacy concerns among the students, many students said that most of the times the labs are 49 congested and their friends can easily see the examination results graph that is lively displayed upon logging in into the system. The study therefore, recommends that there should carrel for each computer in the university ICT laboratories.

References

Asogwa, D. U., Muhammed, A., Ahmed, B. & Danmaitaba, S. G. (2015) *Need for Students Information Management System (SIMS) for Nigerian Universities in a technological age: Challenges and strategies for proper integration*; Vol.2, Issue 12 p.1765-17

Bharamagoudar, S.R., Geeta, R.B. & Totad, S.G. (2013) Web Based Student Information Management System. *International Journal of Advanced Research in Computer and Communication Engineering* Vol. 2, Issue 6.

Braun, V. and Clarke, V. (2006). *Using thematic analysis in psychology. Qualitative Research in Psychology*, 3: 77-101.

Chawinga, W.D. and Zozie, P.A. (2016). Information needs and barriers to information sources by open and distance learners: a case of Mzuzu University, Malawi. *South African Journal of Information Management,* 18(1). http://dx.doi.org/10.4102/sajim.v18i1.692.

EBriks Infotech (n.d) *Student Management System*. Retrieved on 4th march, 2017 from www.ebricks.com

Evangelista (2008). *Student Information System (SIS) of Nueva Viscaya State University* Philippines: St. Paul University Philippines, pp. 20-24, 2011

Igweonu, C. C. (2013). *Extent of Utilization of Information and Communication Technology for Effective Management of Polytechnics in the South Eastern state, Nigeria.* South Eastern: Polytechnics

Kaloki, T. (n.d) *School Management System (savvy school*). Pal soft: Pal soft Education Services

Kasozi, A. B. K. (2005). *University Education: Challenges and Opportunities for Reform*. Kampala: Fountain Publishers

Maere, C. (2011) *Expanding E-Learning Initiatives in Malawi.* Accessed on 5th, March, 2016 from www.ubuntunet.net/../maere_uc2011.pdf

Marrero, S. (2009). *Student Information System for the University of the Cordilleras*. A masteral project study. University of the Cordilleras.

Mzuzu University (2015) *Mzuzu University annual Report 204/15*. Mzuzu: Mzuzu University

Mzuzu University (2017) *Mzuzu University Student Online user manual*. Accessed on 16th February, 2017 from www.mzuni.ac.mw

Mzuzu University (2017) *Mzuzu University 18th Congregation Special Report, March 2017*. Accessed on 16th May, 2017 from www.mzuni.ac.mw

NCS Pearson (2001) OSIRIS-Students Information Management System. Retrieved from http://k12.ncspearson.com/k12/school/osiris.html [29th May, 2017]

Pacio, R.D. (2013) Online Student Information System of Benguet State University (OSIS-BSU), Philippines. *International Journal of Innovative Interdisciplinary Research* Issue 4.

Pan, J. (2004) *Requirements Analysis for a Student Information System*. Leeds: University of Leeds

Paton, M., Q. (2002) *Qualitative Research and Evaluation Methods.* London: Sage Books

Paulsen, M. F. (2002) *Online Education Systems: Discussion and Definition of Terms.* Accessed on 28th October, 2016 from http://home.nettskolen.com/~morten

Maere, C. (2011) *Expanding E-Learning Initiatives in Malawi.* Accessed on 5th, March, 2017 from www.ubuntunet.net/../maere_uc2011.pdf

Secreto, P.V. (2015) Learners' satisfaction level with Online Student Portal as a support system in an Open and Distance e-Learning Environment (ODeL). *Turkish Online Journal of Distance Education*-TOJDE July 2015 ISSN 1302-6488 Volume: 16 Number: 3 Article 3

Swartz, N. (2007). *Data Management Problems Widespread: Organizations Should Regard Data as their Greatest Asset and Invest in Data Management Accordingly*. (ON THE EDGE: The Use & Misuse of Information). Retrieved June 2, 2017 from www.accessmylibrary.com

The World Bank (2016) Digital Malawi Project: Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS). Accessed on 7th July, 2017 at http://www.worldbank.org/infoshop

University of Malawi (2017). *College of Medicine Student Information System* Accessed on 16th February, 2017 at www.medcol.mw

INDIGENOUS KNOWLEDGE AND THE PRESERVATION OF CULTURAL HERITAGE

"IT TAKES TWO TO TANGO": LIBRARIES ACHIEVING SUSTAINABLE DEVELOPMENT GOALS THROUGH PRESERVATION OF INDIGENOUS KNOWLEDGE ON TEXTILE CRAFT MAKING (ADIRE) AMONG WOMEN

Adefunke Olanike Alabi
Acting Law Librarian,
University of Lagos, Nigeria

Adetoun Adebisi Oyelude
Principal Librarian, Kenneth Dike Library
University of Ibadan, Nigeria

and
Abiola Abosede Sokoya
Deputy Polytechnic Librarian,
Yaba College of Technology, Lagos, Nigeria

Abstract

Indigenous Knowledge (IK) serves as a basic input to sustainable development, perhaps due to its distinctive nature in the knowledge economy. Despite the several benefits of IK to sustainable development, many African nations have lost their cultural and customary knowledge due to inadequate attention of heritage institutions especially libraries, in ensuring that IK constitutes part of their collections. Women are at the forefront of using IK to improve livelihoods in areas such as birth control, food preservation and cultural practices; healthcare and in craft making. However, there is paucity of research on indigenous knowledge preservation on art and craft among women in Nigeria. Using the pragmatic approach embedded within a case study research, the study examined how libraries can partner with indigenous communities on indigenous knowledge preservation. The population of the study comprised librarians, who are heads of libraries in public, academic and national libraries, and women artisans in tie and dye (Adire) making in Abeokuta, Ogun State, Nigeria. Semi structured interview method was used as data collection techniques. Through the use of purposive sampling technique, ten librarians were selected while random sampling technique was used to select fifteen women who were considered key informants for the study. Data were analysed using thematic content analysis. The results revealed that indigenous knowledge on adire textiles is not being systematically preserved, but rather retained in family and trade groups. Appropriate recommendations were made based on findings.

Keywords: *Indigenous knowledge; sustainable development goals; preservation; women; adire textiles*

Introduction

Indigenous knowledge (IK) plays a significant role in the society because it has the capacity to empower the community, and promote sustainable development. IK is described as "knowledge and know-how unique to a given society or culture, which encompasses "the cultural traditions, values, beliefs, and worldviews of local people" (Dei 1993 in Agrawal 1995:418). Indigenous knowledge includes cultural heritage in the form of traditional stories, songs, dances and ceremonies that reflect beliefs related to spirituality, family, land and social justice. Largely, it embraces patentable knowledge about alternative healthcare, foods, farm practices, architecture, construction, folk music, arts and crafts. Overall, IK spans across knowledge about people, places, plants, animals and historical events associated with a particular community. One other definition which is more reflecting of the essence of this study as provided by the Indigenous Knowledge Program of the World Bank (2006) which describes IK as the body of knowledge and skills that is embedded in culture, and it is unique to a given location or society. No wonder its relevance in any society remains undisputed.

Indigenous Knowledge, a term synonymous with local or traditional knowledge, keeps attracting the attention of scholars worldwide because of its applicability in a wide spectrum of human life such as agriculture, food security, healthcare, environmental management, biodiversity, textile industry, food preservation and so forth. Moreover, IK has been said to play significant role in Africa's development, most especially sustainable development. The application of IK to sustainable development lies the fact that it emanates from people or communities; based on local needs; specific to culture and context; local adaptation for implementation; and uses local knowledge and skills (Lodhi and Mikuleckey 2010). For IK to become an antecedent for sustainable development in African communities at large, it must be documented, codified, accessed, shared and disseminated (Tapfuma and Hoskin 2016).

The concept Sustainable Development (SD) came to limelight in the report of the World Commission on Environment and Development (Kothari 2007). Sustainable development is a phenomenon that can only be actualised through communication between, and within generations in any society (Eyong 2007). SD is a type of development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (European Union 2016). Consequent upon this, the United Nations 2030 Agenda comprising a framework of 17 Sustainable Development Goals (SDGs), with 169 targets, was adopted with the aim of achieving economic, environmental and social development on 25th September, 2015. In achieving the UN 2030 Agenda, access to information and safeguarding of cultural heritage has been recognised as targets under Sustainable Development Goals by the International Federation of Library Associations and Institutions (IFLA).

Indigenous Knowledge (IK) is fundamental for ensuring sustainable livelihood within local communities all over the world (Briggs 2005). It also serves as basic input to sustainable development, perhaps due to its distinctive nature in the knowledge economy. Women are at the forefront of using IK to improve livelihoods in areas such as agriculture; birth control, food preservation; cultural practices; healthcare; craft making and marketing (Olatokun and Ayanbode 2009; Ndlangamandla 2014; Ugboma 2014). To this end, local women with their traditional unique knowledge are agents for sustainable development through endogenous initiatives in preserving culture, tradition and trade.

The vibrant contribution of IK to the improvement of livelihood in the society in all ramifications perhaps made previous scholars to describe it as the "backbone of social, economic, scientific and technological identity" (Hoppers 2001:76). The benefits of IK include but are not limited to facilitating the design and implementation of culturally appropriate development programmes, identifying techniques that can be transformed to other regions, creating mutual respect, encouraging local participation and building partnerships for joint problem solutions and, building a more suitable future (Greiner 1998). In spite of the several benefits of IK to sustainable development, it has been reported that the phenomenon is facing extinction. This is because African people now imitate western culture in all spheres of life, and invariably, knowledge that is inherent to their society is being disregarded and remains undermined (Tapfuma and Hoskin 2016). Consequent upon this, many African nations have lost their cultural and customary knowledge due to inadequate attention on their part, and heritage institutions especially libraries, in ensuring that IK constitutes part of library collections. Yet, local communities in Africa cannot pretend that IK has not sustained them economically, socially and spiritually.

Study Area

The study was carried out in Abeokuta, Ogun State, in South-West Nigeria. Abeokuta, a town founded in 1830, located along the Ogun River, 78km North of Lagos and 70km from the ancient city of Ibadan. The traditional crafts of the people are tie and dye (Adire), cotton weaving and pottery (Saheed 2013). Abeokuta is believed to be the capital of Adire industry in Nigeria because as far back as 1926, nearly 25% of the town's population was involved in Adire making, and by 1933, about 80% of the cloth vocation in the town was Adire (Areo and Kalilu 2013).

Indigenous knowledge on art and craft such as the production of Adire (tie and dye), "a resist-dyed cloth produced and worn by the Yoruba people of South West Nigeria in West Africa" (Saheed 2013), and made mainly by Egba women in Southwest, Nigeria has not been carefully examined in literature. Using the pragmatic approach embedded within a case study research, the study examined how libraries and indigenous communities can partner on preservation of indigenous knowledge in libraries, with specific focus on tie and dye (adire). The study was guided by the following research questions:

1. What methods do indigenous women use for documenting IK on art and craft (adire making)?
2. How is IK on art and craft (adire making) preserved by the women and libraries?
3. How can indigenous knowledge holders and librarians partner in achieving Sustainable Development Goals (SDGs) through preservation of indigenous knowledge on art and craft (adire making)?

Literature Review

Indigenous knowledge in its entirety is capable of eradicating poverty among communities in different parts of Africa. Regrettably though, there are pertinent issues with respect to management of IK systems in Africa. One of such issues is that IK is facing extinction on a daily basis. The reason for extinction of IK is due to modernisation, globalisation and urbanisation, and lack of proper documentation (Chisenga 2002; Msuya 2007). Proponents of IK argue that libraries must accept responsibility for its preservation. Msuya (2007) unequivocally specified that a proper inventory of available IK in Africa must be done by libraries so as to adequately provide answers to the pertinent questions of what kind of IK exists in different parts of Africa?, where can such knowledge be found when needed?, who owns it?, who should be consulted to access the knowledge? And under what conditions is the knowledge accessible i.e. what Intellectual Property Rights (IPR) exists in getting access to the knowledge?

Indigenous knowledge, being tacit knowledge and not easily codifiable, requires documentation (Dim and Mole 2015). Documentation is the most utilised approach for preserving indigenous knowledge, and is essential for these reasons: safeguarding and preservation for future generation; protection of secret and sacred records; use of traditional cultural knowledge databases for research and development; guarding against misappropriation arising from erroneous granting of patents; and, for IK holders to benefit from the knowledge inherent in them when dealing with third parties (Jain and Jubril 2016).

Previous studies have shown that factors such as skills, expertise and financial resources predict documentation of IK (Ebijuwa 2015). Yet, the International Federation of Library Associations and Institutions (IFLA), in 2003 conceded the inherent value of IK as a tool for sustainable development by recommending that libraries should assist indigenous communities with IK collection, preservation, dissemination, publicising the value, and encourage the recognition of intellectual property rights of the indigenous people for its use.

In Africa, scholars such as Kawooya (2006); Msuya (2007); Njiraine, Ocholla and Onyancha (2010); Ebijuwa (2015); Biyela, Oyelude and Haumba, (2016); Christopher and Arthur (2016); Jain and Jibril (2016) argued that IK has been documented and recorded in countries such as Botswana, Kenya, South Africa, Tanzania Zimbabwe, Ghana, Nigeria and Uganda. Although from the viewpoint of Lwoga et al (2010) libraries have not been particularly active in documenting IK and Plockey (2014) seemed to designate the responsibility of managing and preserving IK to public libraries by advocating for public libraries t leverage on ICTS to document and preserve Africa's cultural heritage.

Owiny, Mehta and Maretzki (2014) support the use of social media and mobile technologies (cell phones) in the creation, preservation, and dissemination of indigenous knowledge and discussed the role of libraries in the integration of social media technologies with older media that employ audio and audio visual equipment to reach a wider audience. This suggestion was corroborated in the research of Jain and Jubril (2016) who found that libraries document indigenous knowledge through use of video cameras, tape recorders and social media technologies in Botswana. To make this task a stress free one, Krampa (2012) as cited in Plockey (2014) suggested that librarians can engage social anthropologists and researchers in capturing and documenting IK.

Ebijuwa (2015) found that majority of IK among the alternative healthcare practitioners is documented by writing and storytelling while digitisation was the least form of IK documentation. She recommended that libraries should look beyond collection development and embark on information services that are more germane to indigenous communities. Dim and Mole (2015) suggested that bibliographic catalogues and databases be prepared for documentation of indigenous knowledge.

Biyela, Oyelude and Haumba (2016) in a comparative study of digital preservation of IK in South Africa, Nigeria and Uganda, found that efforts on digital preservation of IK were a bit more advanced in South Africa than in Nigeria and Uganda and concluded that adequate funding and capacity building for library, archival and information workers was necessary for effective preservation projects. In sum, the on-going discourse in IK literature is tended towards the library accepting responsibility for documentation of IK. However, libraries cannot accept this responsibility unless IK holders are willing to collaborate with.

Preservation of Indigenous Knowledge

Preservation of indigenous knowledge can be achieved through traditional and modern methods**.** Preservation prevents loss of IK and makes it less susceptible to any form of threat (Tapfuma 2012). Furthermore, preservation of IK helps in revitalising endangered cultures, improving economic independence, sustainability of indigenous communities, and community-based involvement in planning and development (Hunter 2005). Preservation of IK is not only a concern in Africa, but also in Latin America, Australia and Asia, where Indigenous Knowledge Centres (IKCs) have been established. Richmond (2008) pointed out that IKC in Australia hosts "Our Story database", a database that enables indigenous communities in Central Australia to create digital collection of local knowledge using modern software. Also in Jamaica, a cultural heritage memory bank is established for preservation of IK. Alegbeleye (2000) found the use of tapes that are later kept in memory banks as strategy for preserving IK in Cayman Islands. The conservation of the textile collection at the Regional Museum of Oaxaca reveals that the textile traditions created by the indigenous people of Mesoamerica provide significant avenues of understanding the vast complexity of ancient, historical, and present-day life" (Klein, 1979). This is true of the effort successfully done in preserving traditional textiles in museums.
A study carried out by Zimu-Biyela (2016) to assess preservation of indigenous knowledge in Dlangubo village in Kwazulu-Natal, South Africa revealed oral traditions, folklores and apprenticeship as traditional method of knowledge preservation while coding, documentation and digitisation are contemporary approaches to knowledge preservation. In Nigeria, Ebijuwa (2015) found that IK preservation is achieved through storytelling, experiential instruction and use of gene banks. Similarly, Anyira, Onoriode and Nwabueze (2010) pointed that various techniques such as digitisation, tape recording and microfilming are used for preservation of IK.

From the evidence provided in literature, it seems that Nigerian libraries have left preservation of IK into the hands of the National museum. For instance, Areo and Kalilu (2013) observe that many of the Nigerian museums located in different parts of the country have set up skill acquisition centres on tie and dye (Adire) making. This initiative by the national museums has not just aided the growth of the textile industry, but has helped in empowering many women and youth to be gainfully employed, but also suggests an initiative on indigenous knowledge preservation. This is a sustainable development goal of which Dim and Mole (2015) advocate for a paradigm shift in the preservation of IK in line with the realities of the 21st century through use of ICTs**.** The rationale for this is that ICTs make information retrieval easy. With easy retrieval information accessibility is guaranteed.

The arguments in literature point to two schools of thought on IK preservation. One school of thought argues for preservation of IK using traditional methods (Chisita 2011; Ngulube 2003), while the other school supports the use of modern methods to preserve IK (Dim and Mole 2015; Hunter 2005). The on-going debate among IK proponents is that none of these two methods of IK preservation has adequately proffered solution to existing challenges on knowledge management (Zimu-Biyela 2016). Based on the complexity of issues involved in IK preservation, it is the view of some authors that a combination of both methods needs to be utilised (Stevens 2008; Becvar and Srinivasan 2009). But Chisenga (2002:19) however, argues that "Indigenous Knowledge should be integrated into the activities of telecentres, so as to meet the information requirements of the people". Telecentres make it possible for local communities to have access to ICTs, necessary user support and training.

In parallel with the increasing relevance of IK in the society, Isah, Bashorun and Omopupa (2012) explained that within the purview of the library and information science (LIS) profession is the management of drawings, paintings, crafts, documentary artefacts and so forth. By virtue of this obligation, preservation of indigenous knowledge by libraries, regardless of type (public, national or academic) is not a forbidden endeavour and therefore, it is suggested that librarians should be eager to integrate centers of cultural activity in the library, especially those working in public and national libraries (Dim and Mole 2015).

As impressive as preservation of IK sounds, some challenges that libraries have in documenting and preserving IK include: intellectual property rights, labour requirements, time, funding, reluctance of the indigenous people to share their knowledge, and competition with existing community structures for IK. Anyira et al. (2010), Chisita (2011) and Biyela, Oyelude and Haumba (2016) found lack of funding, copyright protection, lack of basic equipment, personnel, language barriers and lack of cooperation by indigenous people and libraries' neglect of IK as factors militating against preservation of IK. Where libraries or heritage institutions cannot provide the necessary funding, it is expected that government should do the funding. Nuwamanya (n.d) describing challenges to IK in Uganda stated that there is an impact of negative stereotypes on IK, which can be psychological, social, economic and legal. The secretiveness of IK practitioners about their practice is highly pronounced as some are said to be unwilling to teach their knowledge to their own children unless the children swear never to reveal such knowledge to others. A whole lot of IK is still kept out of the public domain by knowledge owners. Where it has been preserved in databases, the bulk of it is out of public domain. There is also the challenge of patent rights for IK practitioners (Phiri 2002; Sithole 2007; Kalusopa and Zulu 2009).

Lack of ICT and other requisite skills by librarians were also reported as hindrances to preservation of indigenous materials. Okore et al. (2009) as cited in Chisita (2011) identified lack of space as one of the hindrances confronting effective preservation and conservation of indigenous knowledge in libraries. Owiny, Mehta and Maretzki (2014) further explained that some of the challenges of IK are the lack of skilled librarians, especially those with the knowledge and willingness to incorporate oral culture in collections and services to rural communities. Moreover, there is dearth of documentalists as part of library personnel (Makinde and Shorunke 2013). This was corroborated by Phiri's (2002) study of indigenous knowledge in Malawi. He recommended that good documentalists should be available to document indigenous knowledge activities. Zaid and Abioye (2010) identified other obstacles to include lack of suitable equipment for documentation, language barrier (in cases where the documentalist does not understand the local languages of the people).

In many instances, the oral nature of the IK, and the passing away of the elders or custodians of the knowledge constitute a huge obstacle because IK is then irretrievably lost. Another obstacle identified in literature is memory failure on the part of IK holders as indigenous knowledge is orally passed from generation to generation, and cultural practices such as requiring certain rites to be performed as a condition precedent to documentation. In overcoming these inhibitions, there is a need for collaborative approach among heritage institutions (Abioye, Zaid and Egberongbe 2014; Biyela, Oyelude and Haumba 2016). Digitization could be a preservation solution as discovered by Biyela, Oyelude and Haumba (2016) for indigenous knowledge in rural communities and a collaborative approach was needed to achieve this. Building the capacity of information professionals in terms of training, to do the preservation work was also a challenge in South Africa, Nigeria and Uganda from the study.

Libraries achieving Sustainable Development Goals (SDGs) through preservation of indigenous knowledge

In parallel with the increasing relevance of IK in the society, the onus is on libraries to acquire, organise, provide access to, and manage knowledge no matter the format. Isah, Bashorun and Omopupa (2012) explained that within the purview of the library and information science (LIS) profession is the management of drawings, paintings, crafts, documentary artefacts and so forth. By virtue of this obligation, preservation of indigenous knowledge by libraries, regardless of type (public, national or academic) is not a forbidden endeavour**.** Consequent upon this, Dim and Mole (2015) suggest that librarians should be eager to integrate centers of cultural activity in the library, especially those working in public and national libraries.

Greyling (2010) argued that preservation of IK by libraries is a social service, though it transcends the original purpose for which libraries in Africa are set up. The overarching importance of IK preservation is embedded in the submission of Ngulube (2003) who enthused that the only way Africa can become proud of their past is through preservation of IK for future generation. Unfortunately, preservation of IK is yet to be given crucial attention among the library and information professionals (Oyelude and Adewumi, 2008; Ebijuwa, 2015). It is still very evident from literature that libraries remain passive actors, consciously underestimating the value of IK, rather than seeing it as a 'treasure' to be guarded. These arguments point that librarians need to be more passionate about managing indigenous knowledge.

In ensuring sustainable development in Africa and elsewhere, libraries and information professionals should partner with indigenous knowledge holders (Stevens 2008). This can only be attainable when librarians develop concerted interest in preserving indigenous knowledge for substantiation of its impact on sustainable development. Sithole (2007) argues that libraries should expand their knowledge and information sources, by integrating indigenous knowledge as an essential component and bedrock for social development. To this end, libraries should engage the community in interactions at a more tangible level. Chisita (2011) unequivocally emphasised that libraries should engage in community publishing, as a proactive way of helping IK holders document their experiences and as a way of sharing these experiences with others.

Other scholars argue that libraries can facilitate preservation of IK by converting materials on IK into artefacts; inviting traditional rulers, elderly people and professionals for talk shows on IK; sponsoring documentaries and competitions on indigenous knowledge within communities; partnering with library schools to develop collections on indigenous knowledge; promoting accessibility to IK using various platforms; inviting older generations to tell children indigenous stories about their communities in the library (Dim and Mole 2015; Jain and Jibril 2016).

Jain and Jibril (2016) observe that some public libraries in Botswana have developed various initiatives in preserving indigenous knowledge. These libraries include Kanye, Kasane, Molalatau and Palapye public libraries. They pointed that one of these libraries invites community leaders to the library, interviews and documents and shares the information obtained with the rest of the community at meetings, and when they come to the library. Another library documents IK and preserves indigenous people on CDs and their library blog, and creates access to this information at their blogspot (kasanelibrary.blog.spot.com). In another library, librarians, through the library committee were found to collaborate with the indigenous community to capture IK using the Botswana Television cameras and sound recorders. This initiative has led to the involvement of stakeholders in cultural heritage preservation such as media, museum, tourism authority, and the holders of indigenous knowledge. For a proper tango dance, it takes two – the dancer and the partner. Collaboration is a prerequisite in preservation of IK. Librarians have been mandated to go beyond provision of traditional library services, by compiling a dictionary of IK, and storing and providing access to such information using ICTs. It is recommended that librarians should have proactive attitude, and partner with indigenous communities on preservation of indigenous knowledge. Furthermore, libraries through provision of Current Awareness Services (CAS) and Selective Dissemination of Information (SDI) should meet the information needs of IK holders (Dim and Mole 2015).

Methodology

The study is premised on qualitative research approach, guided by the interpretative paradigm. The qualitative approach of research inquiry was chosen for this study because it allows researchers to ascertain the participants' inner experience, (Corbin and Strauss 2008).Using case study research design, the study examined how libraries and indigenous communities can partner on preservation of indigenous knowledge. Case studies permit in-depth analysis of a social unit, such as a person, family, institution, cultural group, or the entire community (Gerring 2004). The population of the study comprised librarians, who are heads of libraries in public, academic and national libraries, and women artisans in Kenta, Abeokuta, Ogun State, Nigeria who are into Adire (tie and dye) production.

Semi structured interview and observation methods were used to collect qualitative data from the women artisans and heads of libraries. Separate interview schedules were designed for these two groups of respondents. This was done bearing in mind their different roles, and perceptions of the phenomenon in the study. Most of the women artisans are not literate, therefore the questions were translated and also interpreted in their local dialect by one of the researchers who is an indigene. Semi structured interview enables the researcher to ask pre-determined set of questions, using the same words or questions as specified in the interview schedule.

Purposive sampling technique was adopted in selecting six librarians, while simple random sampling technique was used in selecting twelve women who were considered key informants for the study. All interview sessions were audio recorded and notes were taken by hand. At the end of all the interview sessions, the data was prepared for analysis by transcribing recorded interviews verbatim as word documents (Saunders et al. 2012). Data from interviews were analysed and presented using content analysis based on the themes emanating from the research questions. All ethical procedures for collecting data in research were ensured.

Data Analysis and Presentation

The study collected qualitative data only using the interpretive paradigm/research methodology. A summary of the research questions, respondents and data analysis strategy for each research question is presented in Table 1.

Table 1: Data sources and data analysis strategy

Research questions	Respondents	Data sources	Analysis strategy
What methods do indigenous women use for documenting IK on art and craft (adire making)?	Women	Interview	Thematic analysis
How is IK on art and craft (adire making) preserved by the women and libraries?	Women & Librarians	Interview	Thematic analysis
How can indigenous knowledge holders and librarians partner in achieving Sustainable Development Goals (SDGs) through preservation of indigenous knowledge on art and craft (adire making)?	Women & Librarians	Interview	Thematic analysis

Findings

The results of the investigation on the research questions are presented in this section based on the following themes: documentation of IK on art and craft (adire making) by the women; IK preservation on art and craft (adire making) by the women and libraries; and partnership between libraries and the indigenous community (women) in achieving Sustainable Development Goals (SDGs) through preservation of indigenous knowledge.

Documentation of IK on art and craft (Adire making) by the women

In response to the question "What are the methods used by indigenous women for documenting indigenous knowledge on art and craft (adire) making? The study found that the women use their memory in documenting indigenous knowledge on adire making. In the words of one of them as expressed using their dialect (as shown in Figure 1): "*won bi mi si ise yin ni, opolo mi ni gbogbo imo naa wa, a ko ko sile*" (*I was born into adire making, the knowledge resides in my memory, I do not write it down*). Another respondent said: "ko si akosile kan kan, lori i bi a ti nse adire sise, ajogun ba ni imo naa je fun mi lati owo iya mi ati iya baba mi…" (*There is no documentation on indigenous knowledge on adire making, I inherited this knowledge from my mother and my paternal grandmother*).

Figure 1: One of the women during Field survey

(Source: Field survey, 2017)

This finding implies that the women do not use any other methods of indigenous knowledge documentation such as writing it down, video recording of the processes, taking photographs of the different design, drawing nor storytelling. This finding is in consonance with that of Okorafor (2010) and Ndlangamandla (2014) who found that Indigenous Knowledge (IK) and practices are usually unwritten, thus, IK holders rely on oral transmission and memory. It is the belief in traditional circles that imparting what is worth-while to the younger generation is through imitation. Traditional beliefs and life styles as well as other aspects of culture are passed on to younger generations in this manner. The phenomenon was found applicable in the study as women adire artisans rely on their memory and pass down their knowledge to their children and apprentices, with the expectation that they will imitate them in learning the craft.

IK preservation on art and craft (Adire making) by the women and libraries

Further findings revealed that there is no major method used in IK preservation on indigenous knowledge by the women, on adire making as one of them said: "*ko ti si ona kan pato, ona kan ti a n lo ni pe awon omo wa ne won n se*". Majority of their children are actively involved in adire making with them, as this is the only means they have been using to ensure that indigenous knowledge on adire making does not go into extinction. Ten out of the fifteen respondents explained that their children also make money from adire making, and this serves as a great motivation for learning the craft. One of the respondents said: "*opolopo awon omo wa ni won ti ran ara won ni ile iwe* (some of our children have been able to sponsor their education and become graduates by making adire). Another respondent said "*awon omo wa mo ohun ti won n ri ninu ise yi, ko je ki o su won lati ni imo lori ise adire sise yi*" (our children know what they derive from adire making, therefore they are not tired of learning the craft).

For some of the respondents, they rely on their memory to preserve indigenous knowledge on adire making. Ten of the respondents said that there are many other children who are not even born into families where people have indigenous knowledge on adire making, but their parents send them to such families to live with them and become apprentice. This finding shows that indigenous knowledge on adire making is preserved through passing the knowledge to their children and apprentices. According to one respondent, "*we also engage in trade fairs, seminars, and adire day, but the major focus on such day is marketing of our products not just locally like in the Northern parts of Nigeria but also internationally, to counties such as the United States, United Kingdom and even China*. The implication of this finding is that though there is no documentary preservation, the knowledge resides in the women and is at risk because when they pass away, the knowledge dies with them just as Msuya (2007), Sithole (2008) and others have lamented.

Interviews with the heads of libraries revealed that the libraries are not actively involved in the documentation and preservation of indigenous knowledge. The reason is that the public libraries are limited by three things: funding, administrative issues and environment. On environmental constraints, one of the respondents from the public library has this to say:

> "*the people who are custodians of IK do not know that any information they give to the library will be used in assisting the community in one way or the other. They believe that for them to share their knowledge, you must give out money. Moreover, the level of knowledge or education of the people makes them not to be willing in giving out information on what they know/ they are doing".*

This corroborates Chisita (2011) and Biyela, Oyelude and Haumba's (2016) findings. Funding is almost non-existent for documenting and preserving indigenous knowledge. It is difficult for libraries to get money to give the knowledge owners to permit the documentation activity.

One of the interviewees from academic library explained that it is not within the focus of the university library, as the institution is a specialised one. One other respondent from national library stated that*: "public libraries should be at the fore front of preservation of indigenous knowledge because they are closer to the people and more accessible".* This corroborates the findings of Ebijuwa (2015). This view is particularly reinforced by Nakata and Langton (2005) and Ngulube (2002) that libraries have not been particularly active in managing indigenous knowledge. Further findings revealed that the libraries studied do not have any activity nor have they developed specific initiatives towards preservation of indigenous knowledge. Only one respondent stated that they developed an initiative called 'Nigeriana' with a view to document every aspect of IK including any material written on Nigeria or about Nigeria. This is unlike the partnership described by Klein (1997) on the partnership between researchers from the Regional Museum of Oaxaca and the indigenous textile weavers in Mesoamerica. This is a gap that needs to be filled in Nigeria and Africa as a whole.

Interviews with the librarians confirmed that indigenous knowledge on arts and crafts (adire making) can be preserved through collection of oral knowledge; coding; use of electronic/digital methods; creating audio visuals materials; getting the adire samples and labelling and classifying them. One of the librarians suggested that: "*we need to relate with the women who are involved in the adire making; meet them, enlighten them on the role of libraries on preservation of indigenous knowledge, interview them and document the process* of adire making". Another respondent suggested:

> "there are two ways to doing this*: We should have audio visual materials to capture and document IK on adire making. We can also create space in the library to keep samples of various design, organise programs such as Adire day. But let me state that the library cannot do such programs alone. The Ministry of Culture and Tourism must be involved. The library can also use knowledge of ICT to preserve indigenous knowledge on adire making"*

It was further revealed that there are no policies on IK preservation in all the types of libraries (public, academic and national libraries) that participated in this study. The findings of Zaid, Abioye and Egberongbe (2014) are corroborated in that policies and regulations are lacking to guide research libraries and institutes on how to go about preservation of indigenous knowledge from communities. Overall, the interviews revealed that preservation of indigenous knowledge by libraries is very germane. However, libraries are yet to wake up to its accomplishment.

Approaches to partnership between libraries and the indigenous community towards achieving Sustainable Development Goals (SDGs)

On achieving Sustainable Development Goals (SDGs), majority of the library heads answered in the affirmative that the library is willing to partner with the indigenous community (women) on adire making. It is worth mentioning that one of the respondents in the Public library pointed out that the library is willing to provide space for preservation of indigenous knowledge in the library. The library is willing to provide information to the women on improving the process of production of the textile (adire).

According to one of the respondents:

> *"the library is willing to partner with the women on documentation of indigenous knowledge and even marketing of such products through the use of technology by training some of them who are literate and have smart phones on how to use the social media to disseminate information about their products. We need librarians that will go out on the field to collect indigenous knowledge orally, by interviewing them or through Focus Group Discussion in order to document the information.*"

This assertion was confirmed by another respondent from the academic library who unequivocally stated that the library is willing to partner with the women on capturing and dissemination of indigenous knowledge on adire making. One of the interviewees from National Library said the library is willing to form synergy with the women by creating a platform for librarians, particularly those who have been living in Abeokuta for over thirty years and know how to make adire to interact with them.

Other ways of partnering with the indigenous women who are into adire making as revealed is for the library to educate and persuade the populace through advocacy programs on preservation of indigenous knowledge with a view to reassure the people that the library/librarians are not out to steal their knowledge but rather to protect them and the knowledge. One of the librarians commented:

> "*We have to go to them, we have to interact with them and let them know the importance of documenting the knowledge they have. We may think that they have the opportunity of passing the knowledge to their children, because we can never be sure of the quality of the adire textile that will be produced in the next 10-15 years. But once*

we capture, document and preserve this knowledge, it will serve as reservoir of knowledge".

Interviews with the women showed their willingness to partner with the library but, this is based on one criterion*: "working closely with the head of the women in the market, popularly called Iya'loja*." She is the only one who can specify the terms of reference for the partnership on preservation of indigenous knowledge by libraries. However, before any consensus can be reached on this matter, a certain fee must be paid by librarians to the iya loja. Then the women can specifically disclose areas in which they are willing to partner with libraries on preservation of indigenous knowledge on adire making.

On the issue of protecting the intellectual property rights of the indigenous community, one of the respondents had this to say: "*the person who gives the information is the owner of the content, so the library will make concerted effort in order to ensure that the copyright is given to the owner of the IK either on individual basis or as a community or group".* It was also revealed that libraries have to ensure the implementation of intellectual property right law by encouraging individual IK holders to benefit from their effort. The owners of certain designs or patterns should have the money due them or patent/royalty paid directly to them. *This is in line with the submission of the* United Nations Declaration (2007: Article 31) on the rights of Indigenous peoples *which states that: "*indigenous people also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions".

.

Conclusion and Recommendation

Just as for the textiles of Oaxaca which have "provided a door into which we are invited to explore the creative spirit of people. Through that door we enter and depart - everyone's heart enriched and transformed" (Klein 1979b), the Adire of the Abeokuta women can be a door to enrich, empower and ensure some of the sustainable development goals for Africa and the world at large. In order to do exploits, librarians should develop personal skills required to handle ICT devices that are used in documentation and preservation of indigenous knowledge. Libraries should activate their research and development (R&D) units, or start one if they hitherto do not have and make indigenous knowledge documentation and preservation one of their priorities. Linkages and collaborations with multinational organisations and public-spirited individuals should be formed to seek for funding as much as possible within the mandates they have, for preservation studies. Key persons in the indigenous communities and traditional institutions should be persuaded to work with libraries so that knowledge can be preserved for the present and future generations.

The traditional textiles (Adire) of the Abeokuta women in Nigeria, an indigenous knowledge of craft needs, as a matter of urgency deserves to be preserved. The tango between the Kenta community of women in art and craft (adire making) and libraries will be a beautiful one to watch, because it is undeniably a gateway to sustainable development goals in a wholesome manner. Indeed, it takes two to tango!

References

Abebe, W. (2011) 'Identification and documentation of indigenous knowledge of beekeeping practices in selected districts of Ethiopia' *Journal of Agricultural Extension and Rural Development*. *3* (5) pp. 82-87.

Abioye, A. A., Zaid, Y.A. & Egberongbe, H. S. (2014) 'Documenting and disseminating agricultural indigenous knowledge for sustainable food security: The efforts of agricultural research libraries in Nigeria'. *Libri*. 64 (1) pp. 75-84.

Afful-Arthur, P. & Filson, C. K. (2016) 'Knowledge management in indigenous medicine: the expected role of Ghanaian university libraries' *Library Philosophy and Practice*. pp. 1-22.

Agrawal, A. (1995) 'Dismantling the divide between indigenous and scientific knowledge' *Development and Change*. *26* (3) pp. 413-439.

Alegbeleye, G.O. (2000). Access to Indigenous Information. Paper Presented at the Kopano Conference on the Role of Arts, Culture and Heritage in the Africa Renaissance, 20-25 July (pp. 1-8).

Anyira, I., Onoriode, O. K. & Nwabueze, D. (2010) 'The role of libraries in the preservation and accessibility of indigenous knowledge in the Niger Delta Region of Nigeria'. *Library Philosophy and Practice (e-journal)*. June pp. 1-10.

Areo, M. O. & Kalilu, R. O. R. (2013) 'Adire in South-western Nigeria: Geography of the Centres' *African Research Review*. 7 (2) pp. 350-370.

Becvar, K. & Srinivasan, R. (2009) 'Indigenous knowledge and culturally responsive methods in information research'. *The Library Quarterly*. 79 (4) pp. 421-441.

Biyela, N., Oyelude, A. & Haumba, E. (2016) 'Digital preservation of indigenous knowledge (IK) by cultural heritage institutions: a comparative study of Nigeria, South Africa and Uganda', *Proceedings of the XIII Standing Conference of the Australian Sociological Association*. Paper presented at the SCESCAL Conference, Ezulwini, Swaziland, 25 - 29 April (pp. 1-19).

Briggs, J. (2005) 'The use of indigenous knowledge in development: problems and challenges'. *Progress in Development Studies*. 5 (2) pp. 99-114.

Chisenga, J. (2002) 'Indigenous knowledge: Africa's opportunity to contribute to global information content'. *South African Journal of Libraries and Information Science*. 68 (1) pp. 16-20.

Chisita, C. T. (2011) 'Role of libraries in promoting the dissemination and documentation of indigenous agricultural information: Case Study of Zimbabwe'. Paper presented at World Library and Information Congress: 77th IFLA General Conference and Assembly, San Juan Puerto Rico, 13-18 August (pp. 1-12).

Christopher, K. F. & Arthur, P. A. (2016) 'Knowledge Management in Indigenous Medicine: the Expected Role of Ghanaian'. *Library Philosophy and Practice*. pp. 1-22.

Corbin, J. & Strauss, A. (2008) *Basics of qualitative research* 3rd ed. London: SAGE Publications Ltd.

Dim, C. L. & Mole, A. J. (2015) 'African Indigenous Knowledge: Call for a Paradigm Shift in Nigeria in a Changing World' *Journal of Research in Arts and Social Sciences*. 8 (1) pp. 40-50.

Ebijuwa, A. S. (2015) 'The role of libraries in the preservation of indigenous knowledge in primary healthcare in Nigeria' *International Journal of Digital Library Services*. 5 (2) pp. 43-54.

Eyong, C.T. (2007) 'Indigenous knowledge and sustainable development in Africa: Case study on Central Africa'. In: Boon, E. K. and Hens, L, Indigenous Knowledge Systems and Tribes and Tribals, Special Volume No. 1: 121-139 (2007). Sustainable Development: Relevance for Africa.

Grenier, L. (1998) 'Working with indigenous knowledge: A guide for researchers, International Development Research Centre (IDRC), Ottawa'. http://hdrnet.org/214/1/Working_with_indigenous_knowledge.pdf. [accessed August 30 2017].

Greyling, B. (2008) 'A model for community participation in African libraries to preserve indigenous knowledge' *Information Studies*. 14 (2) pp. 71-84.

Hoppers, C. A. O. (2001) 'Indigenous knowledge systems and academic institutions in South Africa' *Perspectives in Education.* 19 (1) pp. 73-86.

Hunter, J. (2005) 'The role of information technologies in indigenous knowledge management' *Australian Academic & Research Libraries*. 36 (2) pp. 109-124.

Ilo, P. I. (n.d) 'Acquisition, Preservation and Accessibility of Indigenous Knowledge in Academic Libraries in Nigeria: The Place of ICT' *Ikenga: International Journal of Institute of African Studies*. *14* (1) pp. 468-487.

Indigenous Knowledge Program, World Bank. http://www.Worldbank.org/afr/ik/ [accessed August 31 2017].

Isah, A., Bashorun, M. T. and Omopupa, K. T. (2011) 'Libraries and preservation of indigenous knowledge in developing countries: The

Nigeria experience'. *Library and Information Science in Developing Countries: Contemporary Issues: Contemporary Issues*, pp. 96 -106.

Jain, P. & Jibril, L. (2016) 'Expanding Library Services for Indigenous Community Posterity: A case of selected public libraries in Botswana'. Paper presented at World Library and Information Congress, Columbus, Ohio, 13-19 August (pp.1-19). . http://library.ifla.org/1445/1/168-jain-en.pdf. [accessed August 27 2017].

Kalusopa, T. & Zulu, S. (2009) 'Digital heritage material preservation in Botswana: problems and prospects' *Collection Building. 28* (3) pp. 98-107.

Klein, K. (1979) 'Conservation and Cultural identity'. In: Klein, K. (Ed.), The Unbroken Thread: Conserving the Textile Traditions of Oaxaca. Los Angeles, The Getty Conservation Institute.

Klein, K. (1997b) 'Afterword'. In: Klein, K. (Ed.). The Unbroken Thread: Conserving the Textile Traditions of Oaxaca. Los Angeles. The Getty Conservation Institute.

Kothari, A. (2007) 'Traditional knowledge and sustainable development. International Institute for Sustainable Development (IISD)'. http://www.iisd.org/pdf/2007/igsd_trad [accessed 5 August 2017].

Lodhi, S. & Mikulecky, P. (2010) 'Management of indigenous knowledge for developing countries' *Communication and Management in Technological Innovation and Academic Globalization*. pp. 94-98.

Mahwasane, N. P. (2017) 'Library support and the innovative application of indigenous knowledge systems' *Journal of Sociology and Social Anthropology*. 8 (2) pp. 77-81.

Makinde, D. O., Fajuyigbe, M. O. & Ajiboye, O. J. (2015) 'Nigerian textile industry: A tool for actualising economic stability and national development' *European Journal of Business and Social Sciences*. 4 (8) pp. 331-344.

Makinde, O. O. & Shorunke, O. A. (2013) 'Exploiting the values of indigenous knowledge in attaining sustainable development in Nigeria: the place of the Library'. *Library Philosophy & Practice*. http://digitalcommons.unl.edu/libphilprac/908 [accessed 5 August 2017].

Msuya, J. (2007) 'Challenges and opportunities in the protection and preservation of indigenous knowledge in Africa'. *International Review of Information Ethics.* 7 (9) pp. 1-8.

Ndlangamandla, M. M. (2014) Contribution of indigenous knowledge use on the livelihood of rural women in the Lowveld region of Swaziland: a case study of handicrafts, University of South Africa, Pretoria, <http://hdl.handle.net/10500/18527>

Ngulube, P. (2003) 'Using the SECI knowledge management model and other tools to communicate and manage tacit indigenous knowledge' *Innovation*. 27 pp. 21-30.

Njiraine, D., Ocholla, D. N and Onyancha, O. B. (2010) Indigenous knowledge research in Kenya and South Africa. An informetric study. *Indilinga African Journal of Indigenous Knowledge Systems*. 9; 194 – 210.

Nuwamanya (n.d) Indigenous knowledge and cultural change in a multilingual society: opportunities and threats in Uganda.

Okorafor, C. N. (2010) 'Challenges confronting libraries in documentation and communication of indigenous knowledge in Nigeria' *The International Information & Library Review*, 42 (1) pp. 8-13.

Okore, A. M., et al. (2009) 'Promoting access to indigenous knowledge in digital age: Libraries as facilitators' In: Anyira, I., Onoriode, O.K. and Nwabueze, D. (2010) 'The role of libraries in the preservation and accessibility of indigenous knowledge in the Niger Delta Region of Nigeria' *Library Philosophy and Practice (e-journal)*. June pp. 1-10.

Olatokun, W. M. & Ayanbode, O. F. (2009) 'Use of indigenous knowledge by women in a Nigerian rural community' *Indian Journal of Traditional Knowledge.* 8(2) pp. 287-295.

Owiny, S. A., Mehta, K. & Maretzki, A. N. (2014) 'The use of social media technologies to create, preserve, and disseminate indigenous knowledge and skills to communities in East Africa' *International Journal of Communication*. 8 pp. 234-247.

Plockey, F. D. D. (2014) 'The role of Ghana Public Libraries in the digitization of indigenous knowledge: issues and prospects' *Journal of Pan African Stud*ies. 6 (10) pp. 20-36.

Richmond, C. (2008) 'Engaging with remote communities in the Northern Territory: the Libraries and Knowledge Centres Program' *Fontes Artis Musicae.* pp. 165-169.

Sithole, J. (2007) 'The challenges faced by African libraries and information centres in documenting and preserving indigenous knowledge' *IFLA Journal*, 33 (2) pp. 117-123.

Stevens, A. (2008) 'A different way of knowing: Tools and strategies for managing indigenous knowledge'. *Libri*. 58 (1) pp. 25-33.

Tapfuma, M. (2012) Protection and preservation of indigenous knowledge: towards the creation of a national database. http://www.mstd.gov.zw/../9-set-week-paper-presentation-2012 [accessed August 31 2017].

Tapfuma, M. and Hoskins, R. (2016) Visibility and accessibility of indigenous knowledge on open access institutional repositories at universities in Africa. *Handbook of Research on Theoretical Perspectives on Indigenous Knowledge Systems in Developing Countries*. pp. 248- 266.

Ugboma, M. U. (2014) 'Availability and use of indigenous knowledge amongst rural women in Nigeria'. *Library Philosophy and Practice.* http://digitalcommons./libphilprac/1167 [accessed August 31 2017].

Zaid, Y. and Abioye, A. (2010) 'Museums, libraries and archives: collaborating for the preservation of heritage materials in Nigeria' *African Research & Documentation*. 114 pp.59-71.

Zimu-Biyela, A. N. (2016) The management and preservation of indigenous knowledge in Dlangubo village in Kwazulu-Natal, South Africa, University of South Africa, Pretoria. http://hdl.handle.net/10500/22968.

BEHAVIOURAL PATTERNS AND ASPECTS OF SHARING INDIGENOUS HUMAN HEALTH KNOWLEDGE AMONG TRADITIONAL HEALERS IN TANZANIA

John Jackson Iwata
Postdoctoral Research Fellow,
University of KwaZulu-Natal

and
Ruth Hoskins
Associate Professor
Information Studies Programme
School of Social Sciences
University of KwaZulu-Natal
South Africa

Abstract

The application of indigenous human health knowledge (IHHK) for healing various human physical ailments has recently gained new momentum in many African countries, including Tanzania. Thus, sharing of such knowledge is viewed as the main strategy and mechanism for its sustainability. In Tanzania, efforts to establish collaboration in health service delivery between traditional healers and conventional health practitioners as one of the IHHK sharing strategies have been put in place. However, there is no comprehensive study assessing the behavioural patterns and aspects of sharing of such knowledge among traditional healers.

This study employed a mixed approach for data collection and analysis. Systematic sampling was used to select traditional healers for the study whilst purposive sampling was used to involve coordinators and directors of the Traditional and Alternative Health Practices Council, and Heads of Departments at the Institute of Traditional Medicine. A total of 26 respondents participated in this study.

The results show that traditional healers shared IHHK through mentorship, interaction and socialisation. Other ways included collaboration, training and professional networks. The aspects of sharing involved exchange of patients and experiences on healing or dealing with a particular ailment. However, in the process, the mistrust and stigmatisation of IHHK hindered collaboration between traditional healers and conventional health practitioners. Various strategies have been proposed to address this, including the prioritisation of budgetary allocation for sharing IHHK; the building of trust between and among these health practitioners; having in place knowledge management and *sharing policies which clearly state the incentives and rewards for those who share their knowledge; and the establishment of a designated position for a member of staff responsible for ensuring IHHK is shared.*

Keywords: *Indigenous Knowledge; Human Health; Indigenous Human Health Knowledge; Health Practitioners*

Introduction and background to the study

The application of indigenous human health knowledge (IHHK) for healing various human physical ailments has recently gained new momentum in many African countries, including Tanzania. Studies including Ghimire and Bastakoti (2009), Gurdal and Kulturn (2013), Kanwar, Sharma and Rekha, (2005), Ghoshi and Sahoo (2011), and Caldwell (2007) have shown that in many parts of the world (especially in developing countries, including Tanzania) there is an increased demand and use of IHHK for various human physical ailments. The reasons for such an increase include ease of availability, cost effectiveness and being the only source of healthcare where conventional health resources are scarce (Iwata, 2015). It is however important to note that such knowledge is as varied and detailed as the history of African societies, and that such knowledge has passed through different modes of production in history, and each mode had its own impact (Dharampal, 2006). Proper management of such knowledge through a sharing mechanism is thus viewed as the main strategy for its continuity and its preservation for future generations. Based on the nature of knowledge generation and creation, to some people sharing IHHK is not always an easy concept, although it is very important. Thus, countries including South Africa, Tanzania, China, India and others are urged through various international agreements and recommendations to establish legal and administrative frameworks for sharing such knowledge. For example, the World Health Assembly of 1978 called upon governments to incorporate traditional healers into national health systems, and traditional medicines into national drug policies and legislation as a mechanism for recognition of such knowledge (Iwata, 2015).

Knowledge sharing practices can be observed in both economic and socio-cultural aspects. The question of the behavioural patterns of sharing, and knowledge-sharing patterns of traditional healers in Tanzania is very important and relevant in this context. The study by Chirangi (2013) observed the existence of collaboration between traditional healers and conventional health practitioners in Tanzania. However, Chirangi's (2013) study was silent on the impact of the collaboration in its influence on the process of sharing IHHK rather than exchanging patients between the two health systems. This is irrespective of the existence of reputable traditional healers in various areas of Tanzania such as Mwanza, Singida, Njombe and Mtwara. The failure to establish appropriate arrangements for such knowledge transfer between the health care systems threatens the continued existence of traditional health care practise as the knowledge is held by the practitioners with limited sharing with the next generation, and thus could be potentially lost on their passing.

Statement of the problem

Indigenous human health knowledge (specifically the traditional medicine) is in increased use due to various reasons as mentioned earlier. Many efforts (including the creation of a traditional healers' network; the establishment of collaborative health services delivery between the traditional healers and conventional health practitioners; and the creation and implementation of various policies and strategies to encourage sharing of IHHK) have been put in place (Iwata, 2015). These entire environments assume that the traditional healers' performance in sharing their knowledge of healing at individual or networked level would have been measured and rewarded through professional recognition as well as monetary reward as a powerful motivator (Davenport & Prusak, 2000; Iwata, 2015). However, the behavioural patterns of sharing IHHK among traditional healers in Tanzania are not well-known, and are thus not easily measured and rewarded. This is despite the technological progresses (the acceleration of information and communication technologies) which add value to the dimension of knowledge sharing in the context of increased use of traditional health care systems. This study is intended to uncover the behavioural patterns of knowledge-sharing of traditional healers in Tanzania.

Objectives of the study

The general objective of this study was to investigate the knowledge-sharing behaviour of traditional healers in the following specific objectives:

1. general attitude towards sharing IHHK and the roles played by stakeholders in the process;
2. purpose of sharing such knowledge and the communication channels preferred for sharing;
3. types/aspects of IHHK shared; and
4. factors that inhibit or motivate sharing IHHK among and between health practitioners (traditional healers).

Research questions

1. What were the general attitudes towards sharing of IHHK in Tanzania?
2. What were the roles played by stakeholders in sharing IHHK?
3. What were the purposes of sharing IHHK? And what communication channels were preferred in order to share IHHK?
4. Which IHHK was being shared?
5. What factors inhibited or motivated sharing of IHHK among and between health practitioners?

6. How should knowledge-sharing performance be measured and rewarded?

Significance of the study

The significance of this study is due to the fact that there are few studies conducted on management of indigenous knowledge in Tanzania. There has not been any comprehensive research from an information studies' perspective focused on sharing of IHHK among and between health practitioners. This is despite the increased use of ICTs which facilitate the easier sharing of knowledge. Therefore, conducting this study will not only contribute to literature in this field but also explore various perspectives to encourage sharing of such knowledge among generations.

Literature review

Dharampal (2006) views IHHK as having a long history in that for centuries, people have relied primarily on medicinal plants to cure or treat a variety of human physical ailments. The literature shows that the world (specifically developing countries) has experienced an increased use of traditional medicines and medicine plants as the basis for the maintenance of good health (Ghimire and Bastakoti, 2009; Gurdal and Kulturn, 2013; Kanwar, *et al.* 2005; Ghoshi and Sahoo, 2011; Caldwell, 2007). Furthermore, the study by Dlamin (2001) on facilitating collaboration between traditional healers and western health care practitioners in the management of chronic illness in Swaziland found that despite the introduction of modem medicine by the colonial powers, inhabitants of Africa had never stopped utilising traditional medicine. A number of factors for the increase demand and use of traditional medicines have been provided by authors in knowledge management and medical fields.

Some authors (Gessler *et al.* 1995; Kanwar, *et al.* 2005; Ghoshi and Sahoo, 2011; Caldwell, 2007; Yetein, *et al.* 2013) have mentioned that the increased demand for traditional medicine is due to its being non-narcotic with limited side effects, easily availability cost effective and being the only source of healthcare for the poor or rural communities where western health resources are scarce. Other motivating factors for the increased demand of traditional medicine include dissatisfaction with treatment received or negative experiences with conventional medical practitioners, the price of traditional medicine, i.e. traditional medicine prices range from either been cheap to very expensive and thus was seen to deliver value for money in certain instances (Iwata, 2015). In the case of Tanzania, Stangeland *et al.* (2008) discovered that due to the lack of proper conventional healthcare systems, traditional medicine is often the first choice for provision of primary health care.

Literature recommends the necessity of preserving indigenous knowledge for the benefit of future generations. Researchers assert that the best way to preserve IK is to encourage students to learn from their parents, grandparents and other adults in the community (Dexit and Goyal 2011), thus sharing such knowledge in order to protect such knowledge from being lost. Mchombu (2004) urges elders with knowledge and skills on the use of certain medicinal plants to share their experience with young people as the way of preserving such knowledge; according to Cetinkaya (2009) passing knowledge and experience to young people is an empowerment of local people and youth.

Methodology

Data and information for this study were obtained using the mixed methods approach, but by a largely qualitative methodology. The probability and non-probability sampling in its different techniques was employed in involving participants in the study. Probability sampling through systematic sampling was used to involve respondents where samples were chosen in a systematic or regular way (Powell, 2002). Systematic sampling was used to include knowledge owners in the study. Non-probability sampling through purposive techniques was employed to involve participants occupying administrative positions as directors, Heads of Department or units in the selected institutes (Sillitoe, *et al.* 2005; Saunders, *et al.* 2009). A total of 26 participants were involved, these included analysis of 18 traditional healers, four (4) District Co-ordinators of the Traditional and Alternative Practices Council (TAHPC), one (1) Registrar of the TAHPC and three (3) researchers from the Institute of Traditional Medicine (ITM) of Muhimbili University of Health and Allied Sciences. The following districts and their respective regions in bracket participated in this study: Magu (Mwanza), Singida urban (Singida), Njombe urban (Njombe), and Masasi (Mtwara). In addition, the Institute of Traditional Medicine (Dar es Salaam region) was involved in the study because the institute deals directly with research on traditional medicine and hence staff work closely with traditional healers. Data was obtained from both secondary and primary sources. Semi-structured face-to-ace interviews were the main methods for collecting data in the field. However, other methods of data collection such as focus group discussions, direct observation and documentary review were also used. Both qualitative and quantitative techniques of analysing data were conducted. While the analysis of qualitative data was completed through thematic content analysis, the quantitative data was manipulated using SPSS.

Results

This section provides analysis of the collected data on the knowledge-sharing behaviour of traditional healers in selected districts in Tanzania. The study aimed at investigating the general attitude towards knowledge sharing, aspects and purpose of sharing, communication channels preferred, and factors that constrain or motivate knowledge-sharing among traditional healers. The presentation of the results is based on the approach of giving the purpose of each thematic question before showing the responses. Possible reason(s) for each response are also provided.

Attitude and knowledge-sharing patterns of traditional healers in Tanzania

Questions under this thematic area were intended to investigate the attitudes and patterns of sharing healing knowledge among traditional healers. In order to understand respondents' understanding of the importance of sharing IHHK, respondents were given a mixture of statements to review. The range of their responses has been indicated in Table 1.

Table 1: Attitude on knowledge-sharing among traditional healers (n 18)

Attitude	**Number of response (%)**				
	Strongly agree	**Agree**	**No opinion**	**Disagree**	**Strongly disagree**
It is necessary and worth sharing traditional healing knowledge for its existence and future use	14 (54%)	5 (19%)	7 (27%)	—	—
Sharing traditional healing knowledge is the means to diffuse and increase innovation in health and medical science	7 (27%)	8 (31%)	—	7 (27%)	4 (15%)
Sharing the IHHK is beneficial to all stakeholders (traditional healers, researchers and users)	3 (12%)	4 (15%)	7 (27%)	8 (31%)	4 (15%)
There should be legal framework to force traditional healers to share their knowledge	—	1 (4%)	4 (15%)	5 (19%)	16 (62%)
Sharing IHHK should voluntarily be done by traditional healers	21 (81%)	1 (4%)	4 (15%)	—	—

Source: Field Data, 2014

The findings as indicated in Table 1 show that majority of the respondents (73%) agreed or strongly agreed that it is necessary and worth sharing traditional healing knowledge for its existence and future use. Based on the data in Table 1, results show that 58% of respondents agreed or strongly agreed that sharing traditional healing knowledge is the means to diffuse and increase innovation in health and medical science. However, other respondents (46%) disagreed or were not sure if there were any benefits to be achieved by all IHHK stakeholders from sharing such knowledge. In addition, only a few (27%) of all respondents had no opinion on the matter. In consideration of the idea of having in place a legal framework to force traditional healers to share their knowledge, over 81% of respondents rejected the idea. A majority (81%) rather supported the idea that it should be done on a voluntarily basis; however others (15%) did not express an opinion.

In order to develop actual statistics of the traditional healers who would like to share their healing knowledge, participants were asked to state their attitude towards such practices. The results show that four (4) (22%) were not at all likely to share; 11 (61%) were very likely; and three (3) (17%) were likely to share their knowledge of healing methodologies. This suggests that traditional healers in Tanzania were 78% likely to share their IHHK with others on a voluntary basis. During an interview, one of the respondents commented that "*it is very important to share IHHK for its long existence, this is because doing that will simplify its preservation for the use by future generations and make easy to refer to*". However, the rejection of the idea of sharing such knowledge among the respondents was perhaps due to a lack of awareness on the importance of sharing the knowledge; or a lack of trust resulting from the absence of proper intellectual property rights (IPRs) to protect the knowledge and inventions from theft and misuse.

In addition, it was also recorded that some traditional healers did not share their knowledge because they asserted that the knowledge was a gift from God and identified that it was God himself who decided to give such knowledge to a particular person, but not through sharing. However, it was encouraging to note that the respondents generally possessed a positive attitude towards knowledge sharing and were aware of its importance. Therefore, based on these responses it is clear that most traditional healers had positive attitudes towards sharing IHHK. Sharing such knowledge is very important as it ensures the long-term sustainability of the knowledge. Among the important factors in the successful sharing of traditional knowledge is that of a voluntarily approach and active participation of those who would want to acquire such knowledge.

Patterns of sharing IHHK

During interviews, respondents were asked to state the circumstance under which traditional healers normally shared their knowledge. The aim was to understand the patterns under which traditional healers share IHHK. Based on multiple responses of 26 respondents, data show that 21 (81%) of the respondents were of the opinion that knowledge is transferred through passing it down to their offspring at family level, and to others who seek to become traditional healers; done frequently through the oral and practical based sharing system; and that some society elders who have expertise and who are the rich sources of such healing knowledge, frequently use this pattern of sharing. Seventeen (65%) participants stated that they share with peers through one-to-one collaboration, and that if a colleague has a problem or lacks resources to deliver his/service to the patient, then they can communicate with a colleague for assistance or collaboration. Others, namely 13 (50%) participants, mentioned that a traditional healers' network was an important pattern used in sharing healing knowledge. During an interview, one of the traditional healers pointed out that:

> *"To be frank and speak the truth we share our knowledge when we want to solve a particular problem collaboratively. This happens when a colleague cannot do it alone. However, it would be very good for us to frequently share our knowledge in order to keep our knowledge updated and having a chance to learn other various medicinal plants and its uses from other colleagues".*

Another respondent commented that: "*we have our own associations and it is through such association we normally come together and discuss various matters related to our healing knowledge. Therefore, is from that context we do collaborate to solve various problems surrounding our activities and the community at large*". From the interview, it was observed that the networks pattern of sharing information involved two models for sharing, namely the intra-group and inter-group. In the context when the healing knowledge is shared within the network of traditional healers, it is known as 'intra-group sharing, whereas when it is shared outside the network, it is 'inter-group sharing'. The inter-group sharing normally requires people to have a memorandum of understanding (MoU) between the parties before they start collaborating. In this context, a lack of MoU makes collaboration between conventional medical practitioners and traditional healers very difficult, as one of the respondent pointed out, "*we rarely exchange patients and experiences on healing or dealing with a particular ailment with colleagues in health services provision*".

Data shows that sharing with family members, followed by members in a network of traditional healers dominates the sharing pattern of the IHHK. However, during an interview session with the Registrar of TAHPC, it was observed that people who voluntarily seek to become traditional healers' contribute largely to the development process and the existence of such knowledge.

Purpose of sharing
Respondents were asked to explain the reason(s) as to why traditional healers share/would want to share their knowledge. Based on multiple responses, data

shows that 19 (73%) respondents supported the reason that it is based on the intention to learn from others, and the desire to help others while marketing their knowledge. Certain self-centred reasons for knowledge sharing with other traditional healers were less pervasive; where 23 (88%) of the respondents said that they shared knowledge in order to receive reward or recognition in the community; while for seven (7) (27%) of the respondents, it was an opportunity to develop the image and opportunity to market their knowledge

Types/aspects of IHHK shared

In order to establish the status of readiness to collaborate and share IHHK with other traditional healers, respondents were asked to state their readiness in sharing IHHK. Results show that out of 18 traditional healers involved in this study, 72% were ready to share their knowledge whereas the remaining 28% were not. This finding shows that many traditional healers were willing to share their knowledge, whereas fewer were not.

Traditional healers who stated that they were ready to share their healing knowledge with peers were also asked to express their opinion on the aspects of IHHK which they shared/would share. Based on multiple responses of 13 respondents who showed such readiness, 69% had been sharing with their family members about the usefulness of some plants in healing, and the medicinal preparation process and use of some medicinal trees; while 31% shared with their peers the location where some medicinal trees are easily located. Others (38%) stated that they shared experience in providing answers to a particular problem within the networked group. However, it was observed that all these depended not only on the readiness and willingness to share but also on the appropriateness of the existing policies and guidelines. The rejection response towards sharing of IHHK with others was probably due to the lack of proper and effective intellectual property framework within which to share.

Factors constraining or motivate sharing of IHHK

The respondents were asked to indicate the possible factors that constrained active sharing of IHHK. Based on multiple responses, results show that the majority of the respondents in this study 19 (73%) were of the view that the factors included the issues related to individual factors such as lack of good relationships between knowledge owners; lack of awareness of the importance of knowledge sharing; and lack of trust and fear that their knowledge would be misused. Another important factor mentioned by 13 (50%) of respondents related to organisational factors such as that organisational structure and a culture of sharing within an organisation appeared to hinder the sharing practices of IHHK. Among the mentioned sub-factors of organisational structure and culture included rewards and recognitions and work process. Another barrier related to technological factors that seven (7) (27%) respondents identified was that of poor ICT infrastructure and awareness on the use of such technology to facilitate sharing of such knowledge.

Discussion of the findings

The results of this study mainly based on the perspective and attitude of sharing IHHK among traditional healers. The concentration is specifically on the recurrent ways of which traditional healers as an individual or group perceive sharing their healing knowledge. Therefore, this section presents the discussion and interpretation of the presented results in the previous section.

Attitude and knowledge-sharing patterns of traditional healers in Tanzania

Attitudes have a great impact in either the success or failure of anything. In this study the findings show that respondents had a positive attitude towards sharing IHHK among traditional healers. The reasons provided for sharing included that sharing is the means to diffuse and increase innovation in health and medical science; as well as to ensure sustainability of such knowledge for future use. In providing the reasons for sharing, respondents mentioned the need to put in place a legal framework for security and protection of such knowledge from being stolen or misused by others. This response does not completely mean that in the study area respondents did not shared their healing knowledge. However, they shared with others on a voluntarily basis. Sharing on a voluntary basis was the concern of 78% of the respondents whereas the remaining 22% of respondents rejected the idea of sharing such knowledge. The reason(s) for the rejection was perhaps due to the lack of awareness of the importance of sharing knowledge; or it was due to lack of trust. Lack of trust is the result of the absence of proper intellectual property rights system (IPRs) or the presence of IPRs that do not consider the issues of the environment (where such knowledge is/was being invented and used).

Patterns of sharing IHHK

In the study area the patterns and methodology of sharing IHHK involved transferring such knowledge through passing it down to the offspring at family level and to others who seek to become traditional healers as mentioned earlier. This was stated by 81% of the respondents followed by 65% of the respondents who stated that they shared their knowledge with peers through one-to-one collaboration especially when a colleague had a problem or lacked resources to deliver his/her service to the patient. This shows that traditional healers were willing to share their healing knowledge, and that they did seek assistance or collaboration but only when they need to solve a particular problem with traditional healers in their network.

Purpose of sharing

When respondents were then asked to state the purpose of sharing IHHK, 73% of respondents were of the views that it was a way of learning from others. To others sharing was used as a strategy and opportunity to develop the image and market their knowledge. Furthermore, the findings show that to some people sharing their IHHK was purposively done in order to gain a certain reward and/or recognition in the community. Therefore, it is from this perspective the sharing of IHHK is perceived to assist sharers to develop and provide efficient solutions to the problem. This is because sharing knowledge gives them an opportunity to learn from others, and therefore stimulates innovation. Therefore, sharing IHHK can also be considered as the means for motivation creation among traditional healers and others who would want to become practitioners of such medicine.

Types/aspects of IHHK shared

The results show that majority of the respondents (72%) were ready to share their knowledge with their family members and peers. Although respondents stated the aspects of knowledge to be shared, it is however important for the government and other stakeholders to create environment conducive for such sharing. Such environment should include the availability of proper IPRs and education on the importance of sharing IHHK. The presence of all these factors would create the readiness and willingness to share.

Factors constraining or motivating sharing of IHHK

From the findings it was revealed that in the study area there were many factors constrained the sharing IHHK. The factors were classified as individual factors, organisational factors and technological factors. Therefore, in order to fully deal with these factors and influence the management and sharing of IHHK, one is supposed to understand the stakeholders' mindset and its associated behaviors towards the practices. This is because the mindset and the behaviour of an individual can either facilitate or impede the successful sharing practice. Mindset entails the ways in which individuals make sense of the situations that lead to the formation of priorities. Having shared mindsets among traditional healers would obviously serve as the foundations of the culture of sharing the know-how and ultimately lead to common patterns of behavior among individuals in the organisation with the use of a specified technology to assist the process. Hence, the successful practice of sharing IHHK requires a specific mindset that is shared among key players who perform the respective roles.

Conclusion

The findings show that respondents in the study area had a positive attitude towards sharing of IHHK as they asserted that the practice was an essential and effective means of not only managing but also ensuring its survival and existence for current and future use. A surprising factor was the results which showed that certain traditional healers were unwilling to share their knowledge.

In addition, various factors constraining sharing of IHHK were mentioned. The factors included lack of mutual trust and respect and IPR frameworks to share such knowledge.

Recommendations

To improve sharing of traditional healing knowledge among traditional healers, the following is recommended:

1. Organisations and governments should make efforts to foster cordial relationships among traditional healers and conventional medical practitioners through providing ample interaction opportunities by organising informal social events.
2. Professional networks of traditional healers should reconsider their collaboration approaches and put more emphasis on collaborative service provision to avoid unnecessary competition among traditional healers. A culture of knowledge sharing needs to be developed among traditional healers through sensitisation campaigns.
3. Health practitioners should start regarding their fellow health services providers as their knowledge partners instead of competitors; according to the findings, traditional healers are likely to share their ideas and knowledge is a proper IPR framework to do so exists.

References

Caldwell, K. I. (2007). Assigning medicinal plants value and estimating traditional environmental knowledge in Ghana, Africa using ethnobotanical measures, (Master's dissertation). Raleigh: North Carolina State University.

Cetinkaya, G. (2009). Challenges for the maintenance of traditional knowledge in the Satoyama and Satoum ecosystems, Nato Peninsula, Japan. *Human Ecology Review.* 16(1):27-40. http://www.humanecologyreview.org/pastissues/her161/cetinkaya.pdf. Accessed on 11/02/2013.

Chirangi, M. M. (2013). AfyaJumuishi: towards inter-professional collaboration between traditional and conventional medical practitioners in the Mara Region of Tanzania, (Doctoral thesis). Leiden: University of Leiden. https://openaccess.leidenuniv.nl/bitstream/handle/1887/20753/NIEUW%20Chirangi's%20dissertation%20to%20Library%20-%20Copy.1.pdf?sequence=38. Accessed on 11/02/2014.

Davenport, T. H. & Prusak, L. (2000). *Working knowledge: how organisations manage what they know.* Boston: Harvard Business School Press.

Dharampal, H. (2006). Incorporating indigenous knowledge into the school science curriculum, (Master's dissertation). Durban: University of KwaZulu-Natal.

Dixit, U. and Goyal, V. C. (2011). Traditional knowledge from and for elderly. *Indian Journal of Traditional Knowledge.* 10(3):429-438. http://nopr.niscair.res.in/bitstream/123456789/12019/1/IJTK%2010(3)%20429-438.pdf. Accessed on 18/02/2013.

Dlamini, P. S. (2001). Facilitating collaboration between traditional healers and western health care practitioners in the management of chronic illness in Swaziland. Doctoral thesis. Durban: University of Natal.

Gessler, M. C., Msuya, D. E., Nkunya, M. H. H., Schar, A., Heinrich, M. and Tanner, M. (1995). Traditional healers in Tanzania: socio-cultural profile and three short portraits. *Journal of Ethnopharmacology.* 48(3):145-160. http://epubs.scu.edu.au/plantscience_pubs/459. Accessed on 09/12/2013.

Ghimire, K. and Bastakoti, R. R. (2009). Ethnomedicinal knowledge and healthcare practices among the Tharus of Nawalparasi District in central Nepal. *Forest Ecology and Management.* 257(10):2066-2072. http://ac.els-cdn.com/S0378112709000644/1-s2.0-S0378112709000644-main.pdf?_tid=3d51c2f0-92dd-11e2-a5cf-00000aacb35dandacdnat=1363949148_e89a91a4e314c8e39a9523cfd4f396d7. Accessed on 20/02/2013.

Ghosh, P. K. and Sahoo, B. (2011). Indigenous traditional knowledge. *Orissa Review*. http://orissa.gov.in/e-magazine/Orissareview/2011/Jan/engpdf/66-71.pdf. Accessed on 28/03/2013.

Gurdal, B. and Kulturn, S. (2013). An ethnobotanical study of medicinal plants in Marmaris (Mugla, Turkey). *Journal of Ethnopharmacology.* 146(1):113–126. http://www.sciencedirect.com/science/article/pii/S037887411200846X. Accessed on 07/12/2013.

Iwata, J. J. (2015). *Management of indigenous human health knowledge in Tanzania* (Unpublished doctoral thesis). University of KwaZulu-Natal, Pietermaritzburg.

Kanwar, P., Sharma, N. and Rekha, A. (2005). Medicinal plants use in traditional healthcare system prevalent in Western Himalayas. *Indian Journal of Traditional Knowledge.* 5(3):300-309. http://nopr.niscair.res.in/bitstream/123456789/6906/1/IJTK%205%283%29%20%282006%29%20300-309.pdf. Accessed on 20/03/2013.

Mchombu, K. J. (2004). *Sharing knowledge for community development and transformation: a handbook.* Ottawa: Oxfam Canada. https://www.oxfam.ca/sites/default/files/sharing-knowledge-handbook-2.pdf. Accessed on 17/01/2014.

Powell, R. R. 2002. *Basic research methods for librarians.* 3rd ed. London: Ablex Publishing Corporation.

Saunders, M., Lewis, P. and Thornhill, A. (2009). *Research methods for business students*. 5th ed. Harlow: Prentice Hall.

Sillitoe, P., Dixon, P. and Barr, J. (2005). *Indigenous knowledge inquiries: a methodologies manual for development.* Dhaka: University Press Limited.

Stangeland, T., Dhillion, S. S. and Reksten, H. (2008). Recognition and development of traditional medicine in Tanzania. *Journal of Ethnopharmacology*. 117:290–299.

Yetein, M. H., Houessou, L. G., Lougbe´gnon, T. O., Teka, O. and Tente, B. (2013). Ethnobotanical study of medicinal plants used for the treatment of malaria in plateau of Allada, Benin (West Africa). *Journal of Ethnopharmacology.* 146:154-163. http://ac.els-cdn.com/S0378874112008562/1-s2.0-S0378874112008562-main.pdf?_tid=216b0da4-92fa-11e2-a5f3-00000aacb360andacdnat=1363961557_7c9dad2457c180603ade8f4c4fa50e7c. Accessed on 20/03/2013.

THE ROLE OF FOLKTALES IN THE PRESERVATION OF INDIGENOUS KNOWLEDGE AMONG THE SHONA: A REVIEW BASED ON AARON C. HODZA'S *NGANO DZAMATAMBIDZANWA*

Blessing Chiparausha
Deputy Librarian
Bindura University of Science Education
Zimbabwe

and
Frederick Mavhunduse
Information Literacy Librarian
University of Venda, Thohoyandou, Limpopo
South Africa

Abstract

The role of folktales in the preservation of indigenous knowledge is explored. The article is premised on the study of indigenous knowledge systems and folklore studies particularly the study of African folktales. The study sought to identify the indigenous knowledge preserved by folktales and how this indigenous knowledge is preserved by the folktales. By way of the documentary research method, five randomly selected folktales from a compilation of folktales entitled *Ngano dzamatambidzanwa* by A.C. Hodza were studied. Findings reveal that Shona folktales preserve indigenous knowledge by the use of words, idioms, proverbs, song and dance. Performing and reciting folktales help in assuring that knowledge intended for transfer from the storyteller to the audience is not lost. Collection and publishing of Shona folktales are recommended.

Keywords: *Folktales; Shona folktales; Ngano; Indigenous knowledge preservation; Folklore*

Introduction

Folktales are traditional oral narratives in which legends, proverbs, music, jokes and stories about a particular culture or social group of people are captured (Shoniwa 2013). Folktales are a good form of entertainment but they have other roles they play. For instance they educate and validate cultural and social practices (Turner, 1992). There are two forms of folktales namely animal tales and human tales. The former have animals playing the characters of humans in a real world whilst the latter has human characters interacting with other humans and animals (Turner 1992). In both human and animal tales, the intention is to expose certain human characteristics, elevating those that are esteemed by society whilst disparaging those that are an anathema in society.

This article intends to explore how indigenous knowledge is preserved by Shona folktales. It seeks to generate discussion by stimulating new thoughts concerning the role of folktales in the preservation of indigenous knowledge. The focus is on illustrating how Shona folktales act as an instrument for knowledge preservation. Shona is the mother language for about 80% people in Zimbabwe. Folktales are known as 'ngano' in the Shona language. The objectives of the study were to answer the following research questions:

1. What indigenous knowledge is preserved by Shona folktales?
2. How do Shona folktales preserve indigenous knowledge?

Theoretical framework

This article is premised on the study of indigenous knowledge systems whose emphasis is on the need to preserve, and enhance access to local or traditional knowledge (Boven and Morohashi 2002). The paper is also entrenched in folklore studies, a broader concept in which the study of folktales belongs (Makaudze 2013; Tatira 2005). Structuralism theory by Propp (1968) underpinned this study. Propp's structuralism theory suggests that folktales can be broken down into sections beginning with a situation that is followed by 31 functions 'wedding' being the thirty-first. In summary, the theory shows that as a tale progresses through these series of sequences from the initial situation, the end of the tale results in conflict resolution, punishment of villains and rewarding of heroes (wedding).

Indigenous knowledge was defined by Owiny, Mehta and Maretzki (2014) as local knowledge that is unique to a given culture or society. Boven and Morohashi (2002) described indigenous knowledge as local knowledge that is unique for a particular culture or society that is useful for decision-making within that local context especially activities carried out in rural communities.

Makaudze (2013) views folktales as an important component of literature that today's society must not ridicule but should rather take seriously as they help to expose and interpret the realities and challenges posed by life. This is contrary to some people's views that folktales are an art of the past and have no part to play in today's life experiences. Makaudze is of the opinion that contemporary Zimbabweans can get a better understanding of the challenges they face and the solutions thereof from folktales. In fact, Makaudze advocates for the collection and preservation of this genre of literature to avoid loss of the vital knowledge they possess.

Ngano (folktales) were passed down generations verbally by a storyteller called a *sarungano*. The sarunganos were regarded with high esteem in Shona culture because they were custodians of knowledge and wisdom. As such, they were given the task of educating future generations; ngano was a way of passing down codified religious messages to children as they prepared for adulthood. (Matsika 2009).

Folktales bring people together since they are mostly narrated to groups of children seated together outdoors in Africa (Hodza 1983). As the folktale is being told, knowledge is being shared for the greater good of the community; this approach assures that all listeners present are memory banks. The folktale itself and the knowledge imparted by use of the folktale who be preserved from loss following the demise of the story teller.

Shoniwa (2013) is of the view that most folktales actually help to transmit and preserve cultural values of a group of people as they reveal how that particular group lives. Furthermore, Canonici (1995) considered folktales to possess the power to integrate a child in his or her community physically and spiritually through the participation in the folktales. As such, folktales are regarded as a storehouse of society's knowledge, a way of recalling and transmitting wisdom of the past through generations in an entertaining manner (Canonici 1995).

Whilst memorisation and recall were also developed through folktales as listeners of folktales were expected at some point to be storytellers for others, the practice guaranteed immediate verification of whether the indigenous knowledge imparted by the story teller had been permanently acquired by the listeners. Apart from the names of people, places, animals and objects, folktales also have proverbs, songs and indigenous practices, all of which were supposed to be memorised by the listeners (Hodza 1987). Memorisation assures ultimate preservation and future recall of memorised concepts, in this case indigenous knowledge.

Folktales are associated with performance, thus they integrate language (words), music and dance (Hodza 1983; Canonici 1995). By way of performance, folktales make it easy for society to carry forward indigenous knowledge associated with the performance. Similarly, the songs and dances constituting part of the folktales carry with them some particular indigenous knowledge about certain practices such as rain-making, courtship, etc. This means that the songs can retain and, of course transfer the indigenous knowledge they contain without necessarily reciting the entire folktale from which the song is borrowed.

Research methodology

Research findings presented in this article are based on an analysis of a compilation of folktales entitled *Ngano dzamatambidzanwa* by A.C. Hodza. Documentary research method was therefore used. Documentary research method was described by Ahmed (2010) as the analysis of documents that contain information about the phenomenon studied by investigating and categorising physical sources, most commonly written documents. Mogalakwe (2006) considered documentary methods as the analysis of documents that contain information about the phenomenon one wishes to study. Documents contain written text and are produced by individuals or groups in the course of their everyday practices for their own immediate practical needs (Mogalakwe 2006).

Ahmed (2010) and Mogalakwe (2006) are in support of the use of this research method because they consider it good and sometimes more cost effective than social surveys, in-depth interview or participant observation. They argue further that just like surveys and ethnography, documentary research is one of the three major types of social research that have been the most widely used such that some leading sociologists have been using it as the principal method and sometimes as the only one.

Documentary research is better suited for the study of the past rather than of the present considering that documents survived over periods of time whether recent or ancient thus documentary research has become largely the preserve of historians (McCulloch 2004). McCulloch (2004) is of the opinion that books, reports, newspapers and creative literature provide useful information as evidence on public issues, debates, and everyday life and experience. Despite being underestimated, creative literature such as folktales, can be a good source of evidence if carefully used (McCulloch 2004).

Mogalakwe (2006) suggests that carrying out research using documentary sources is not different from other areas of social research in that, in every case, data needs to be handled scientifically using some quality control criteria namely: authenticity, credibility, representativeness and meaning. The same criteria are supported by McCulloch (2004) and he refers to these criteria as rules.

The folktales compilation was considered authentic. Authenticity relates to a document being original or genuine such that it can be depended upon (Mogalakwe 2006). *Ngano dzamatambidzanwa* met this criterion since it is an original compilation that underwent an editorial process prior to publication. Similarly, the book was considered credible because it was subjected to publishing process during which errors and distortions were eliminated. Mogalakwe (2006) and McCulloch (2004) described representativeness as level of a document to stand in place of others of a similar nature. A document that is representative of other could therefore be regarded as a sample. The collection folktales selected are a true representation of other folktales in Shona and easily compare with other collections such as *Ngano Volume 1 and Ngano Volume 2* by George Fortune.

Helm (2000) pointed out that document analysis can be carried out through analytical reading, content analysis or quantitative analysis. The researchers used content analysis to gather data from the document under study. Content analysis was defined by Kondracki, Wellman and Amundson (2002) as the process of systematically analysing messages in any type of communication. They considered content analysis as a technique that overlaps between qualitative and quantitative techniques because it is a technique that allows qualitative analysis of seemingly quantitative data. Kondracki, Wellman and Amundson (2002) suggested content analysis can be used to develop inferences about a subject by coding messages according to themes. Content of five randomly selected folktales was analysed in the study.

Synopsis of the folktales used

In the first folktale entitled *Vasikana nevakomana shumba* is a story of three girls who fell in love with three young men from a far way place. The lovers decided to marry. The three girls agreed to elope with their lovers and during the process they had to take with them their young brother who had accompanied them to the well to fetch some water. The young brother later discovered that his sister's lovers would mysteriously change into lions. The young brother had to weave a basket which he, together with his sisters used to escape from the boys who had turned into lions and had decided to feast on them.

The second folktale entitled *Mwanasikana nevabereki vake* is about a couple who over-protected their daughter to an extent of barring young men from proposing marriage to her. A certain young man tricked the family by pretending to get bark-string from a baobab tree for the purpose of 'ferrying' his parents' fields and well closer to the home. The 'idea' looked so interesting such that the girl's family thought of engaging the young man. In the process, the young man and woman fell in love and got married. The 'plan' of bringing the wells and fields closer home was later realised to be a mere scheme to win the girl's heart.

In the third folktale, *Mudzimai akadyiswa muko,* a couple had girl children only. The husband then decided to get a second wife who could possibly give birth to boy children. Indeed, the second wife gave birth to baby boys. The husband got so pleased with the second wife and the first wife felt rejected. To reclaim her 'lost' husband, the first wife mixed gravy extracted from cooked baboon meat with the second wife's relish. The second wife's totem was Baboon and having eaten relish mixed with such gravy, there was a curse on her which turned her into a baboon and she disappeared into the bush. The second wife's parents had to find a sangoma to transform their daughter back into a human being. Thereafter, the parents withheld their daughter from going back to her husband.

The forth tale entitled *Gudo naTsuro* is about Baboon and Hare who were friends. One of the days Baboon asks Hare to accompany him to his in-laws. Along the way, Hare uses various tricks to eat the food they had taken for the journey alone. At Baboon's in-laws, the two are tasked to sleep in the goats' kraal to guard the in-laws' goats against hyenas. Baboon and Hare hatch a plan and slaughter one of the goats at night and Hare once again tricks Baboon such that the latter never had a piece of the meat they had cooked. In the morning the in-laws discover that one of the goats had been slaughtered and Hare treacherously convince Baboon's in-laws to believe that their in-law was responsible. Baboon is killed and Hare takes over Baboon's wife.

The fifth folktale, *Vakomana vakapfudzana pamusikana,* recounts the story of a young man called Chiwareware who visited his uncle and aunt and during his visit he fell in love with a girl who lived nearby. After paying the bride price, the young man had to pay a courtesy visit to his in-laws. As part of the visit, Chiwareware was tasked by his in-laws to weed a field. Another young man in the neighbourhood who had been vying for the same girl's love killed some lizards and put them on the fire that had been left by the field-side by Chiwareware when he was warming himself. When Chiwareware's lover brought him food to eat, she was shocked to find some lizards being roasted on the fire; she thought that her husband-to-be ate lizards. When Chiwareware came for his food, he thought his wife-to-be ate lizards. An argument started and the two broke up. The young man who had put the lizards on the fire took advantage of 'what had happened' and married the girl.

Findings

The findings are split into two sections; the first section presents the elements of indigenous knowledge preserved by Shona folktales whilst the second section outlines ways used to preserve the indigenous knowledge found in Shona folktales.

Indigenous knowledge preserved

Words (names of places, objects, animals, time, etc)

The language itself was preserved in ngano. Folktales are ideally shared orally. As the folk story teller shared his or her story new words would be introduced; meaning and interpretation could be derived by the listeners but most importantly, the story tellers had to explain to the listeners.

From the folktales in *Ngano dzamatambidzanwa*, the following examples were picked:

Sub-theme	**Example**	**Meaning**	**Page(s)**	**Folktale(s)**
New words				
	Mariga	God	12	Vasikana nevakomana shumba
	Kukuhwa [moto]	Kindle [fire]	13	Vasikana nevakomana shumba
	Guruguda	Remove meat from bone with teeth	13	Vasikana nevakomana shumba
	Musumbu / mushunje	Bundle of grass	15	Vasikana nevakomana shumba
	Gandanga	Wild person	15	Vasikana nevakomana shumba
	Guchu	Calabash used to carry food or drink on a journey	24	Mwanasikana nevabereki vake
Place names				
	Chiro	Baboon's sleeping place	25	Mwanasikana nevabereki vake
	Nhanga	Bedroom for unmarried girls	26,28	Mwanasikana nevabereki vake
Time				
	Mukanganyama	Early morning/ break of day	24	Mwanasikana nevabereki vake
	Runyanhiriri	Break of day	25	Mwanasikana nevabereki vake
	Rufuramhembwe	Dusk/nightfall	26	Mwanasikana nevabereki vake
	Marambakuedza	Very early in the morning	27	Mwanasikana nevabereki vake

Idioms and proverbs

Ngano also use idioms and proverbs to convey some messages. Here are some examples extracted from *Ngano dzamatambidzanwa*:

Example	**English translation**	**Page(s)**	**Folktale**
Mariga akombora	God has blessed us	12	Vasikana nevakomana shumba
Kakova kaMusinzwi kadira muna Taisireva	The stream of Musinzwi (disobedience) has drained itself into the stream of Taisireva (we said so)	22	Vasikana nevakomana shumba
Kuzivana nemusikana	Fall in love / get intimate	28	Mwanasikana nevabereki vake
Tsika mwedzi	Miss a monthly menstrual (possibly pregnant)	28	Mwanasikana nevabereki vake

Song and dance

Song and dance are also found in Shona folktales. Below are examples of songs that were found in the collection of folktales under study:

Example	**English translation**	**Page(s)**	**Folktale**
Mushauri: Vana vedu marema Vadaviri: Tevera zvine muswe wazvo	Soloist: Our children are mentally retarded Chorus: Follow those that have tails	17	Vasikana nevakomana shumba
Muimbi: Ihe ihe vakafa havana chavakaona; Zvino ndozviudza ani baba akafa, ...	Singer: *Ihe ihe* those who have died have nothing they've seen; Whom shall I tell my father is dead, ...	57	Mudzimai akadyiswa muko

5.1.4 Cultural and religious norms and practices

Concepts relating to culture, religion and the social issues of a community are portrayed in folktales. In fact, it is the religious and socio-cultural setting of the community that shape the issues captured in the folktales. Below are some excerpts from the *Ngano dzamatambidzanwa*.

Example	English translation	Page(s)	Folktale
Rooranai vematongo	Marry someone whose family / background you're familiar with	12	Vasikana nevakomana shumba
Kugamuchira / kubata zvakanaka vaeni	Hospitality to visitors	24-28	Mwanasikana nevabereki vake
Kutumira roora kuburikidza nasadombo/munyai	Sending lobola to the in-laws by a mediator / middle man	29	Mwanasikana nevabereki vake
Kutsvaira dota / kuonekera	Son-in-law's first customary visit	29	Mwanasikana nevabereki vake
Kutizisa mukumbo	Elope	30	Mwanasikana nevabereki vake
Kutukana utukwa (Chizukuru)	Jokes, pleasantry / humour between uncles and nephews / nieces	75	Vakomana vakapfudzana pamusikana
Kutsvetsva musikana kuburikidza nasekuru nambuya	Courting a girl through the help of uncles and aunties	75	Vakomana vakapfudzana pamusikana

How indigenous knowledge was preserved in ngano

In the first instance, it must be realised that after the sarungano had recited a folktale to listeners, he or she would at some other time tell the same folktale again. Besides, there were instances when the listeners would request the sarungano to recite a folktale they had listened to earlier on. In that way, a folktale would be easily recalled. In some cases, the sarungano would randomly pick any one of his or her listeners to recite a folktale. The sarungano would assist the young ones whenever they failed to remember folktale correctly.

Coupled with the fascinating use of animals instead of human beings, a story teller would unfold a folktale to an audience. Besides getting to know the name of wild animals and insects, the children listening to the folktales would easily remember the folktale because of the entertaining manner in which they were delivered. For instance, in *Ngano dzamatambidzanwa*, the folktale *Gudo naTsuro*, the story is about friendship in which one of the friends (Tsuro) was cunning. Besides learning about Baboon (Gudo) and Hare (Tsuro) and their nature as animals, the listeners would also relate that to humans and their behaviour and relationships.

Most folktales involved the story teller and the listener from the introduction to the conclusion. In the folktales the listeners actively participated in the folktales through two main ways. In some folktales, the listeners were expected to say some words in agreement with the story teller after each phrase said by the story teller, for example in the tale of *Gudo naTsuro*, the listeners were saying "Dzepfunde" after every phrase said by the sarungano. Dzepfunde simply meant "Go on". In some folktales the listeners participated through singing. The sarungano would introduce a song and the audience was expected to join and sing along; in most cases, singing was accompanied by dancing. A typical example is found in the tale entitled *Vasikana nevakomana shumba* in which the following song was sung:

Bhaa, tunduu
Toita musere musere toenda kwedu
Tundu,
Toita musere musere toenda kwedu (Hodza 1983:19).

Discussion

Language preservation

Shona folktales as shown by the selected cases from *Ngano dzamatambidzanwa,* are an ideal way of teaching the language to children. By so-doing the young ones are not just entertained but are also taught new words. Similar views were expressed by Canonici (1995, 21) and Hodza (1983, 7 and 1987, 7). The new words are also preserved together with the folktale as it remains in the memory of the story teller and the listener. The evolution of an indigenous language may, therefore, not threaten the loss of some words, names, etc and their meanings since they are preserved in the ngano. As examples, in today's Shona the young generation may not use the words and phrase: Mariga (Mwari), nhanga (girls' bedroom), kukuhwa moto (lighting a fire). The use of such words and phrases in folktales, therefore, preserves them.

Idioms and proverbs

As observed in earlier literature (Hodza 1983; Canonici 1995), the richness of a language is easier revealed by use of proverbs, idioms and riddles. All these are used to convey some particular message and in most cases it relates to a specific locality. The aspect of *specificity* must be emphasised as it points back to the definition and descriptions of indigenous knowledge provided by Owiny, Mehta and Maretzki (2014) and Boven and Morohashi (2002) where they put emphasis of the fact the indigenous knowledge is unique to a given culture or society. Ngano also use idioms and proverbs to convey messages. Reading from *Ngano dzamatambidzanwa*, there are expressions such as:

1. "Mariga akombora" (God has blessed us);
2. "Kakova kaMusinzwi kadira muna Taisireva" (meaning disobedience has led to regretting for something earlier warned against).

The first statement is full of wisdom. Even though in the tale the boys who turned into lions were the ones thanking God for being blessed with beautiful girls, the point being driven home by the story teller is that, it is God who blesses and not men so human kind ought to seek blessings from Him. Similarly, the second phrase is a reminder to the listener that when advice is being given, the listener should take heed to avoid regret. The phrase also reminds the listener of the essence of the story: people ought to get married to those whose background they are aware of to avoid the dilemma that led the girls in the story to regret afterwards.

Song and dance

Singing and dancing are very important in the Shona society. This is why song and dance are part of the Shona folktales. Shoniwa (2013) made similar sentiments in his study. By including songs in the folktales, the story teller wisely taught the audience how to sing and dance; in most cases the tunes and dances would fuse the local culture's genres and dance styles. In some cases, there would be inclusion of musical instruments as well. In that regard, story-telling was not just a simple task but a multi-faceted one. The songs also carried within them some messages for both the singer and the listener.

Culture, religion norms and practices

The fact that concepts about religious and socio-cultural practices are found in Shona folktales adds their value. The findings of this study concur with assertions made by Shoniwa (2013), Turner (1992) and Canonici (1995) that folktales reveal more about people's culture, religion and social practices. Shona folktales, as revealed in *Ngano dzamatambidzanwa*, actively emphasise, while at the same time acting as storehouses of indigenous knowledge, that people should be hospitable (kugamuchira vaeni), that a mediator (sadombo/munyai) is required when paying lobola, a newly married young man should pay a courtesy call to the in-laws for customary introductions (kutsvaira dota), and that jokes and pleasantry (kutukana utukwa/chizukuru) is reserved for uncles and aunties with their nephews and nieces.

Ngano and indigenous knowledge preservation

It is important to note that folktales were an outdoor activity involving groups of children (Canonici 1995). Knowledge was easily cascaded to many people instantaneously. Since the sarungano would recite a folktale to listeners as many times as he or she could and as many times as the listeners requested, memorisation became quite easy. Memories of the listeners became the store houses of indigenous knowledge embedded in the folktales as suggested by Matsika (2013) and Canonici (1995). The instances when the listeners were asked by the sarungano to recite a folktale they had listened to earlier was an excellent way of preserving the folktales and consequently the indigenous knowledge they possessed. This recitation was, however, flexible allowing the reciter to bring in their own personality into the story through the words used, tone or emotion of voice creating a close variation of the original. This taught other skills such as communication skills and creativity among others. Thinking skills were taught in that the children would usually be expected to deduce the moral of the story and this was tested by some discussions which would usually conclude the story.

As observed by Turner (1992), Canonici (1995) and Hodza (1983) that folktales were an entertaining way of giving advice to young ones, the same is realised in Shona folktales in which the fascinating use of animals instead of human beings entertained but also provided advice to the audience. Children listening to the folktale got to know the name of places, objects, wild animals and insects and would easily remember the folktale because of the entertaining manner in which they were delivered. Most importantly, there was a lesson derived out of all that.

Conclusion

It is imperative to stress that Shona folktales are a good vehicle for the preservation of indigenous knowledge relating to the Shona language; words, among them, names of places, objects, animals, time together with idioms and proverbs are preserved in a manner that is entertaining but also portrays their meanings. Socio-cultural norms and practices, coupled with song and dance are also embedded in the indigenous knowledge preserved by Shona folktales. It is therefore imperative to ensure that all known Shona folktales are collected and published.

References

Ahmed, J.U. (2010) ‘Documentary research method: new dimensions’ *Indus Journal of Management and Social Sciences*, 4(1):1-14.

Boven, K. and Morohashi, J. (2002) *Best Practices using Indigenous Knowledge*. The Hague and Paris: Nuffic and UNESCO/MOST.

Canonici, N.N. (1995) ‘Folktale as an educational experience’ *South African Journal of Folklore Studies.* 6:13-23.

Helm, M. (2000) ‘The Spectrum of Qualitative Research - the Use of Documentary Evidence’. *Paper presented at the Qualitative Evidence-based Practice Conference15-17 May 2000,* Coventry University. http://www.leeds.ac.uk/educol/documents/00001391.htm (Accessed 19 May 2014).

Hodza, A.C. (1983) *Ngano dzamatambidzanwa*. Gweru: Mambo Press.

Hodza, A.C. (1987) *Shona folk tales*. Gweru: Mambo Press.

Kondracki, N.L., Wellman, N.S. and Amundson, D.R. (2002) 'Content analysis: review of methods and their applications in nutrition education' *Journal of Nutrition Education and Behaviour* 34(4):224-230.

Makaudze, G. (2013) 'It still makes sense! : Shona ngano (folktale) and the contemporary Zimbabwean socio-economic and cultural set up' *International Journal of Development and Sustainability* 2(2): 521-529.

Mashiri, P. Mawomo, K. and Tom, P. (2002) Naming the pandemic: semantic and ethical foundations of HIV/AIDS Shona vocabulary. *Zambezia* 29(2):221-234.

Matsika, M. (2009) 'Ngano and the demise of Zimbabwean Shona traditional religion'. *Zimeye* 17 October 2009. http://www.zimeye.org/ngano-and-the-demise-of-zimbabwe%E2%80%99s-shona-traditional-religion/. (Accessed 19 May 2014).

McCulloch, G. (2004) *Documentary research in education, history and the social sciences.* London: RoutledgeFalmer.

Mogalakwe, M. (2006) 'The use of documentary research methods in social research' *African Sociological Review* 10(1): 221-230.

Propp V. (1968) *Morphology of the Folktale*. Austin, Texas: Unversity of Texas.

Owiny, S.A., Mehta, K. and Maretzki, A.N. (2014) 'The use of social media technologies to create, preserve, and disseminate indigenous knowledge and skills to communities in East Africa' *International Journal of Communication* 8:234–247.

Shoniwa, K. (2013) 'Why folk tales are important' *The Herald* 11 November 2013. http://www.herald.co.zw/why-folk-tales-are-important/. (Accessed 19 May 2014).

Tatira, L. (2005) 'Shona folktales: towards a developmental interpretation' *South African Journal of Folklore Studies* 15(1):34-43.

Turner, N.S. (1992) 'Aspects of satirical commentary in izinganekwane' *South African Journal of Folklore Studies* 3:54-61.

MANAGING INDIGENOUS KNOWLEDGE IN GHANA: METHODS AND TECHNIQUES

Azindow Bawah Fusein
Assistant Librarian
Ho Technical University

and
Hannatu Abue Kugbllenu-Mahama
Interim Librarian
Ho Technical University

Abstract

Knowledge Management (KM) is indispensable in the 21st century due to the considered value of knowledge. Knowledge is regarded as a factor of production, a means of gaining competitive advantage and a valuable asset that needs to be managed. The oldest human knowledge is the Indigenous Knowledge (IK). Every society has IK. It is from generation to generation. IK formed the basis for human survival and for the establishment of world civilizations. In the contemporary society, IK is still relevant for sustainable development; however, little attention is given to its management. Studies have explored how IK can be managed to ensure its continuity in various communities. However, how IK is managed in Ghana has not been investigated. This paper investigates the methods and techniques used to manage IK in Volta Region of Ghana. An interview was conducted in two communities to collect data for the study. The communities are noted for Kente (local fabric) weaving and for beekeeping as their traditional occupations. Residents of these communities were purposively and randomly selected to participate in the study. The data was analysed using SECI KM model as a theoretical basis. The study found that there exist systems for managing IK in the Volta Region in Ghana. The main methods used to manage IK are informal apprenticeship and socialisation and the techniques used are observation, practice, instructions, questioning and answering, meetings, discussions, and consultations.

Keywords: *Managing, indigenous knowledge, methods, techniques, Ghana*

Introduction

Knowledge management (KM) is indispensable in the 21st century due to the considered value of knowledge. In the post-industrial society, knowledge is regarded as a factor of production, a means of gaining competitive advantage and a valuable asset that needs to be managed. The oldest human knowledge is the indigenous knowledge (IK). Every society has IK.

IK can be described as knowledge that is developed, maintained and used by a particular community over a period of time. It is unique to a particular culture and society and normally passed on from generation to generation, through word of mouth (Sarkhel, 2016). IK is mostly tacit, expressed in people's beliefs, daily activities, events and the environment in which the people live. IK includes cultural heritage such as traditional stories, songs, dances and ceremonies and knowledge of traditional medicines, foods, farm practices, architecture, handicrafts, artwork and folk music (Hunter, 2005). Arguably, IK formed the basis for human survival and for the establishment of world civilizations.

In the contemporary society, IK is still relevant for achieving better societies and sustainable developments. Philip (2015) argues that since the 1980s, influential, international institutions widely acknowledged the importance of indigenous knowledge. The world still relies on IK for food and medicine (Sarkhel, 2016); 80% of the world's population still relies on IK for medicine and 50% for food supply Nyumba (2006). These statistics shows that IK remains indispensable in human society. Unfortunately, there are threats to its survival in most communities (Sukula, 2006). It is diminishing at a faster rate and needs to be rescued. It needs to be managed.

Lwoga and Ngulube (2008) argue further that little IK has been recorded for preservation hence access to valuable database in developing countries is limited. Lwoga and Ngulube (2010) also contend that there is the need to continuously recorgnise, identify, validate, preserve and disseminate indigenous skills and practices to improve agricultural activities. To address this situation, scholars are exploring how IK can be preserved and protected to ensure its continual existence through its management. Lwoga, Ngulube and Stilwell (2010) find traditional KM models appropriate for managing IK and integrating it with different knowledge systems and recommend for KM approaches to be adopted in managing IK. Njiraine and Le Roux (2011) assert that despite the tacit nature of IK, traditional KM models can be applied in managing it. These findings suggest that traditional KM theories can be appropriately applied in managing IK. However, Lwoga (2011) suggests that in managing IK, the western-based KM models should be applied with a caution in the context of the developing world. Probably, this could be due to cultural diversity and developmental disparity.

Sarkhel (2016) and Ngulube (2002) outline strategies that library or information professional should adopt in order to manage IK. The strategies include: preparing inventories and registers of indigenous knowledge systems, incorporating IK into collection development policies, developing standardized tools for indexing, cataloguing of IK and making IK accessible to communities and compiling bibliographies of IK resources. Muswazi (2001) proposes developing a holistic Indigenous Knowledge Management (IKM) system that will pull together the strengths of LIS, ICT and knowledge experts in a continual basis in the codification, collecting, organising, preserving and sharing of IK. This proposal is laudable in that, most IK is still in tacit form, distributed in many heads, so to manage it effectively a coordinated effort is necessary. IK is a shared 'property' so its management should also be a shared responsibility. Therefore, Padmasiri (2017) recommends to national governments to intervene in the management of IK by formulating and implementing appropriate policies and strategies to manage it. These studies are efforts made, in various countries to find out how IK is managed, however, little research is conducted in Ghana on how IK is managed.

Problem Statement

Many rural communities in Ghana still depend on IK systems for their livelihood. IK systems still provide knowledge for learning trade such as weaving local fabrics; better farming practices, herbal medicine and general well being of the people. Despite the importance of IK to Ghanaian rural communities, efforts have not been made to find out how such knowledge is being protected. There is a need to manage the IK to ensure its continuity or availability for future generations. The purpose of this paper is to investigate IK management practices in Volta Region in Ghana.

Objectives

1. To explore how IK is managed in the Volta region of Ghana.
2. To investigate the methods used to manage IK in Volta region.
3. To investigate the techniques used to manage IK in Volta region in Ghana.

Research questions

1. To what extend is IK managed in the Volta Region in Ghana?
2. What methods are used to manage IK in the Volta region?
3. What are the techniques used to manage IK in the Volta region?

Justification

IK is part and parcel of the Ghanaian community. It remains critical to the sustainable development of the country. It is also important for maintaining, protecting and preserving the Ghanaian cultural heritage. So, protecting Ghanaian IK and preserving it in the right form are crucial and the best way to do so in the twenty-first century is through KM. Therefore, any study that is meant to find out how Ghanaian IK is or could be managed is justifiable.

Knowledge gained from such studies could equally be useful in other developing countries, especially in Africa.

The rest of the paper is presented in the following order; the methodology used to collect the data is discussed, followed by discussion, conclusion, recommendation and picture evidence of researchers' interaction with some participants on the field.

Methodology

A case study approach was employed to study two communities: Adaklu and Kpetoe. Adaklu and Kpetoe communities are traditionally noted for knowledge of beekeeping and weaving kente respectively. Both communities are found in the Volta Region of Ghana. The communities were studies based on the fact that they are noted for possessing such IK. The communities were studied together in order to compare IKM practices of different IK in different communities.
In all 30 people (15 from either community) participated in the study. Participants from Adaklu community were purposively selected using experience criterion. The researchers were linked up with a sub chief of the community. With the help of the chief, the researchers identified and listed 15 most experienced beekeepers in the community. The researchers discussed with the participants the aim of the project and requested for their participation in the project.
On the part of Kpetoe, the participants were randomly selected using a membership list of Kpetoe Kente weavers' Association. The list (of 25 members) was obtained from the association with the help of the president of the association. Individual members of the 15 selected were contacted on phone to explain to them the aim of the project and to request for them to participate in the study. Fortunately, they all agreed to participate. An interview was then scheduled with them individually.

A face-to-face interview was conducted in both communities using an interview guide. The guide was designed based on the Knowledge Spiral Model (Nonaka & Takeuchi, 1995). The model is a conceptualization of KM in organisations. The variables explored were Knowledge acquisition, knowledge sharing and knowledge retention. The interviews were analysed using the model as a basis. Apart from the bio data, all answers regarding IKM were coded under the three variables. However, the researchers introduced a forth variable, sustainability of IK industries. Data related to the forth variable were also transcribed and coded under IK sustainability.

Results

This section is the presentation and analysis of the data collected for the study. Apart from the bio information, the data is coded under four themes: methods and techniques of acquiring IK, methods and techniques of sharing IK, methods and techniques of retaining IK and sustainability of IK industries. The first three themes or variables were selected based on the knowledge spiral model (Nonaka & Takeuchi, 1995) and the last theme was based on the variable introduced by the authors.

Bio Data

All the participants were natives of the two communities (Adaklu and Kpetoe) studied, with an average age of 51. They all have a basic education except three. However, the highest educational level reached among them was middle school (standard seven) and the lowest level was primary four. On the average, participants used two years to acquire the knowledge of beekeeping and kente (a local fabric) weaving and have been practicing for many years.

Methods of and Techniques of Acquiring IK

Participants were interviewed regarding how they acquired the knowledge of beekeeping and kente weaving. It was established from their responses that all the participants acquired the knowledge from their parents or relatives. The knowledge acquisition process involves attaching a child to an adult (mostly a parent) at infancy. The child learns by observing what the parent or relative does. The master gives instructions and the child asks questions where necessary. Therefore, the main method of acquiring IK in the communities studied is informal apprenticeship as shown from narratives below.

> "My father was a beekeeper. I cannot remember at what age, but I started involving in what my father was doing when I was young. As I was with him he would be telling me do this, do that, bring this to me and so on. Unaware, I was learning what he was doing. But I began asking questions after I became aware of what I was doing".

Another participant also stated that:

> "My father taught me even though, I had no interest. I learned by observing what he was doing and at some point he started teaching me how to construct the hive. Within five years I could make my own beehive. I could also harvest but I was not strong enough to carry the beehive or harvested honey from one place to another".

Participants from kente weavers also have similar responses:

> "I am 12 years old. My grandfather asked my cousin to teach me how to weave, so I started the work two years ago. I come here Monday to Saturday during holidays and only Saturdays when we are in school. You can see that I am now weaving, but not as fast as my master".

> "My father was a weaver. I started learning from him when I was young. It took me eight years to master. But I left the industry to seek employment in a mission hospital after the death of my father. However, it was difficult to earn enough money there, because it was a voluntary work. It became difficult to live with the meagre pay, so I had to return to my village to take up kente weaving as a full time job".

The narratives also show that the main techniques used in acquiring IK in the communities studied are observing, imitating, instructing, practicing, questioning and answering.

Methods and Techniques of Sharing IK

Participants were interviewed to understand how the masters share their knowledge and experiences with apprentices, and among themselves. The findings reveal that IK is exchanged between and among apprentices and masters through interactions, meetings, consultation and training. So the main method of sharing IK in the communities studied is socialisation, and the main techniques are meetings, consultation and training. A participant mentioned that

> "We train our boys through the interactions we have with them. We also hold regular meetings to discuss problems and share new ideas. We consult among ourselves anytime, anywhere. I can just call a colleague to find out how to deal with new issues that I am confronted with".

Another participant stated that:

> "During meetings members discuss new techniques, new designs, and new problems encountered. Besides meetings, members individually consult colleagues when they encounter problems. The consultation is done through telephone calls or face to face contact. In meetings we share new experiences".

Methods and Techniques of Retaining or Storing IK

The participants were interviewed to find out how they retain the knowledge gained from their parents and colleagues. The researchers wanted to know whether they document their experiences. Unfortunately, their knowledge remains tacit, stored in their heads. So, the main method of retaining or storing IK in the communities is memorization. The participants blamed their inability to document what they know on their low level of education. One participant lamented:

> "You know we are not educated like you are, I cannot write. It would have been good if we have been writing down the experiences, but I have never thought of it. Maybe you people can help us".

Sustainability of IK Industries

All the participants were optimistic that IK industries are sustainable. The reason for the optimism is that IK represents a tradition that must be continued.

Another reason is that the communities are identified with the various IK and therefore, allowing it to die means losing an identity. Again, indigenous industries provide income for most of the local people so people will always engage in the industries for their livelihood. However, the kente weavers felt they were not making enough income from the industry. They blamed the inadequate income on their inability to raise initial capital themselves. They depend so much on customers to finance their businesses and that weakens their bargaining power. The kente weavers had no doubt that the industry will continue to exist, but for it to be vibrant, they needed financial support to raise their own initial capitals.

> "Of course there is a future for IK industries. Communities are identified with various kinds IKs so for the sake of communal identity, people will not allow the industries to collapse. We earn income from the industry; it provides informal employment for our youth, so we are optimistic that IK industries will exist forever. However, for the industries to be vibrant there is the need for government and other stakeholders to support them".

Discussion

The paper investigates IKM practices in the Volta Region of Ghana. The paper finds that there are informal systems for managing IK in the region, for that matter in Ghana. Informal apprenticeship is found to be the main method of acquiring IK in the communities studied. Learners are attached to their parents or relatives who possess the required knowledge, for a period of time to learn a trade, an occupation or a profession. This method of acquiring IK is less costly, mostly because the apprentices are children or relatives of their masters. This method has no formal contractual agreement and can last for unspecified period. This implies that IK in the communities studied can be acquired without much constrains through informal apprenticeship. However, Alhassan (2012) finds apprenticeship unpopular in the acquisition of IK. The author finds traditional, instructional methods to be the main method of acquiring IK in his/her study. This means that different methods are used in different communities or countries to acquired IK. However, a combination of these methods could be more effective.

Techniques used to acquire IK in the communities studied are observations, imitations, practicing, instructions, questioning and answering. Apprentices would obverse what their masters do and try to imitate the actions. They continue practicing till they get it right. But where they are not clear of certain actions of their masters or why certain things are done in certain ways, they ask questions for clarifications. The master also issue instructions as to how to perform certain actions. This means that the technique used to acquire IK in the communities studied are hands-on-based, so knowledge acquired through these techniques would be difficult to forget. In a different study, observation and imitation of older relatives were also found to be means of acquiring IK (Alhassan 2012).

Socialisation is found to be the main method of sharing IK in the two communities' studies. The apprentices are attached to their parents of relatives, so IK is shared between them through interactions. The finding is similar to what is happens in Tanzania. In Tanzania, farmers use socialisation approach to share knowledge on traditional vegetables production, consumption and preservation (Chipungahelo, 2015). This finding is understandable because most IK, especially in the developing world, remain tacit and socialisation is an effective way of converting tacit knowledge to another tacit knowledge. However, knowledge shared through socialisation could be prone to distortion, forgetfulness and misrepresentation.

Findings also show that general interactions between masters and apprentices, discussions among peers and informal consultations were the main techniques of sharing IK in the Adaklu and Kpetoe communities.

It also found that IK in the communities studied remains tacit, so it is stored or retained in minds of people who possess it. This means that IK in the communities can easily be lost as a result of death or migration of the most knowledgeable people. Therefore codification and documentation of IK in the communities are necessary.

Conclusion

This paper investigates IK management practices in two Ghanaian communities to find whether IK is managed in those communities and the methods used if it is. The results reveal that there are systems of passing on IK from generations to generations in those communities and the main methods of acquiring and sharing IK are apprenticeships and socialisation respectively. The main techniques used for acquiring IK are: observation, imitation, practicing, questioning and answering. Also, interactions, discussions, meetings and consultation are techniques used for sharing knowledge. However, IK of the communities studied still remained stored in the mind of the people through memorization. With these findings, the authors conclude that IK is managed in Ghana. However, the practices are not documented.

Recommendation

This study is limited to only two communities, so the authors recommend that similar studies in the future should include many communities. Most IK and IK systems in Ghana, perhaps in most of the developing countries, remain tacit, so future studies should consider mechanisms of codifying and documenting IK and IK systems. Finally, IK is a shared property of a particular community, so its protection or preservation should be a concern for all stakeholders in the community. Government and NGOs and agencies should do well to support the IK industries to ensure a continuity of the knowledge they hold. Below are sample pictures of participant's interaction with researchers

Figure 1 depicts a local beehive with honey producing bees

Figure 2 depict honey ready for harvesting

Figure 3 depicts the researchers interacting with local bee farmers

Figure 4 shows some kente weavers in action

References

Alhassan, J. A. (2012). Indigenous Knowledge Acquisition and Transfer among Members of the Nupe Royal Music Band in Nigeria. *Afr. J. Lib. Arch. & Inf. Sc*., 22(1), 61-66

Chipungahelo, M.S. (2015). Knowledge sharing Strategies on Traditional Vegetables for Supporting Food Security in Kilosa District, Tanzania. *Library Review, 64 (3),* 229-247

Hunter, J. (2005). The Role of Information Technologies in Indigenous Knowledge Management. *Australian Academic & Research Libraries, 36 (2),* 109-124

Lwoga, E.T., Ngulube, P. (2008).Managing Indigenous and Exogenous Knowledge through Information Communication Technology for Agricultural Development and Achievement of the UN Millennium Development Goals. In Lwoga, E.T., Ngulube, P. & Stilwell, C. (2010). Managing Indigenous Knowledge for Sustainable Agricultural Development in Developing Countries: Knowledge Management Approaches in the Social Context. *The International Information & Library Review*, *42*, 174-185

Lwoga, E. T. (2011). Knowledge Management Approaches in Managing Agricultural Indigenous and Exogenous Knowledge in Tanzania. *Journal of Documentation, 67 (3),* 407-430

Lwoga, E.T., Ngulube, P. & Stilwell, C. (2010). Managing Indigenous Knowledge for Sustainable Agricultural Development in Developing Countries: Knowledge Management Approaches in the Social Context. *The International Information & Library Review*, *42*, 174-185

Muswazi, P. (2001). Indigenous Knowledge Management in Swaziland: perspectives. *Information Development, 17 (4)*

Ngulube, P. (2002). Managing and Preserving Indigenous Knowledge in the Knowledge Management Era: challenges and opportunities for information professionals. *Information Development, 18(2)*

Nonaka, I & Takeuchi, K.(1995). *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation*. Oxford: Oxford University Press

Njiraine, D & Le Roux, C.J.B. (2011). Applying Earl's KM model in IK management: withreference to Kenya and South Africa. *The Electronic Library, 29(6),* 817-827

Padmasiri, G. R. (2017). Management of Indigenous Knowledge in Sri Lanka, with Special Reference to Indigenous Medicine. *Information Development* 1–14

Philip,K.S. (2015). Indigenous Knowledge: Science and Technology Studies. International Encyclopedia of the Social & Behavioral Sciences, 2nd edition, Volume 11. Elsevier Ltd. This article is reproduced from the previous edition, volume 7, pp. 7292–7297

Sarkhel, J. K. (2016). Strategies of Indigenous Knowledge Management in Libraries. *Qualitative and Quantitative Methods in Libraries (QQML) 5, 427-439*

Sarkhel, J.K. (2016). Strategies of Indigenous Knowledge Management in Libraries. *Qualitative and Quantitative Methods in Libraries (QQML) 5: 427-439, 2016*

Sukula, S. K. (2006). Developing Indigenous Knowledge Databases in India. *The Electronic Library, 24(1)*, 83-93

PROMOTING INFORMATION ETHICS FOR SUSTAINABLE DEVELOPMENT

INSTALLATION OF RADIO FREQUENCY IDENTIFICATION TECHNOLOGY AS A TOOL FOR CURBING SECURITY CHALLENGES IN NIGERIAN ACADEMIC LIBRARIES.

Hafiz Umar ***CLN***
Librarian
Federal Polytechnic Bali
Nigeria

Abstract

Security challenges facing library resources has necessitated the introduction or installation of Radio Frequency Identification Technology (RFID) in many countries of the world in order to curb the challenge of the Libraries in Nigeria which are also faced with the challenge of insecurity in buildings, resources and services. The installation of this device in the Nigerian academic libraries will go a long way in fighting the problems of resource insecurity. This paper examines the benefit and workability of this system in academic libraries in Nigeria. It also discussed the installation of the library RFID technology management system and the reasons for the installment of the technology system in the Nigerian academic libraries were also highlighted in the paper.

Key Words: *Installation; RFID; Security; Academic Libraries*

Introduction

RFID is an acronym of Radio Frequency Identification; it is a technology that enables the detection, tracking, identification, and monitoring of physical items or objects by attaching a tag or transponder to items or objects. It uses tags which communicate information by radio wave through antenna on a small computer chips attached to the objects or items so that such objects may be identified, located and tracked. The technology has advantages over traditional barcodes as its wireless identification capability revolutionizes the inventory control tags and does not require direct line of sight reading.

The RFID readers can interrogate tags at greater distances concurrently. This technology has the advantage in which tags have read/ write capability, allowing stored tag information to be altered dynamically. According to Dai in Keshinro (2016) RFID is a combination of radio frequency based technology and microchips technology. The technology could be applied to the academic libraries in the Nigerian higher institutions particularly in the circulation section or unit where books are kept, at the entrance and the exit of the library for the purpose of enhancing efficiency, security and reduces the stress injuries among staff. It also saves time of the patron and improves productivity. RFID tag could be attached to books and other information resources in the library so that when the booksor resources are carried to the counter, the library staff could either activate or de-activate the electronic article surveillance bit in the books tag, if a book is borrowed, then the surveillance is de-activated (Pandy).

Overview of RFID Technology in the Libraries

Academic libraries are the libraries found in the higher institutions of learning, they contained a collection of various information resources and services, such resources includes books, periodicals, reference materials, media resources and the structure where these resources are housed. Without proper and efficient security system in place, Nigerian Academic Libraries risks the danger of security problems which could lead to loss of library resources such as books and periodicals.

The RFID library technology system to Nigerian Academic Libraries could automate the following activities in the libraries by using the technology;

1. Charging and discharging the library Sources and resources
2. Verification of library resources
3. Locating of books and other resources on the shelves
4. Accessioning number of books and other information resources on the shelves at a time
5. Searching particular books in order to check their presence in the library.
6. Registration of library users
7. Cataloguing activities

In the report of Deborah Caldwell Stone (2010), library technology consultant, systems librarians and other vendors defended RFID; they argued that RFID offered adequate security for library users; privacy and maintained that RFID was an in-efficient and labour intensive method for surveilling patrons' reading choices. In the view of M. M Olivia in Akinyemi L.A (2014), "RFID is a new solution technology for security problems" His paper addresses the use of RFID as a means of securing premises and materials. Linda (2007), opined that RFID technology enhances efficiency in circulation and security of libraries. The technology has an enormous benefit and protection to the expensive resources and services in the libraries. It also has the capability of identifying problems.

The installation of RFID to the library system, saves the time of the library staff in rendering their daily routine, this is because their routine is automated. It also saves patrons time spent when searching and borrowing of a book, the technology also has the advantages of detecting threats and monitor situation. Number of time is spent by a library staff in accessioning and the recording of information resources as they come to the library and go out of the library. With RFID management and technology system when a book is return, the check-in and out system activate the surveillance bit. The system involves installation of software that enables person to borrow and return a borrowed material; it has the capability of providing a user with an alternative on a computer screen. Books selected by the users for borrowing are identified by the reader.

How RFID Technology Management System Works in Academic Libraries

Tagging of Information Resources

The tags attached are also called transponders which are connected with antenna and microchip/packaging. It has the capability or functionality of performing calculation, reading / writing and storing information of an item or objects such as books and other information resources in the library to which they are attached. The stored information in the tags provides location, identification, proofs and the kind of loan status. In the contribution of Rathinasabapathy (2009), RFID tags have two primary advantages over the ubiquitous bar code; RFID tags carry unique identifiers, unlike bar codes that typically provide a general product number, RFID tags allow vendors to serialize each individual item. This allows for significant granularity in distribution control. While bar codes must be read one at a time and at close range, multiple RFID tags can be read at once without any visibility to human or mechanical reading devices

Check-in / outstation of the library

This is an issuer desk station where library staff assists users with some services such as loans and the return of the library items. The station is where tagging and sorting of information resources takes place. The place is equipped with modules for tagging, sorting and electronic surveillance for setting and re-setting in order to control the alignment system at the gate of the library. Self-check in / out station of information resources in the library by users. This situation allows patrons / users to either check in or out several books at a time. It has the advantage of greater degree of privacy since only the users handle their resources while checking in or out. This station contains hardware and software computer application for personal identification with the help of personal identification card and pin number. The books to be borrowed or returned would be put in front of the screen on the reader and the reader would display the book title and other information when required.

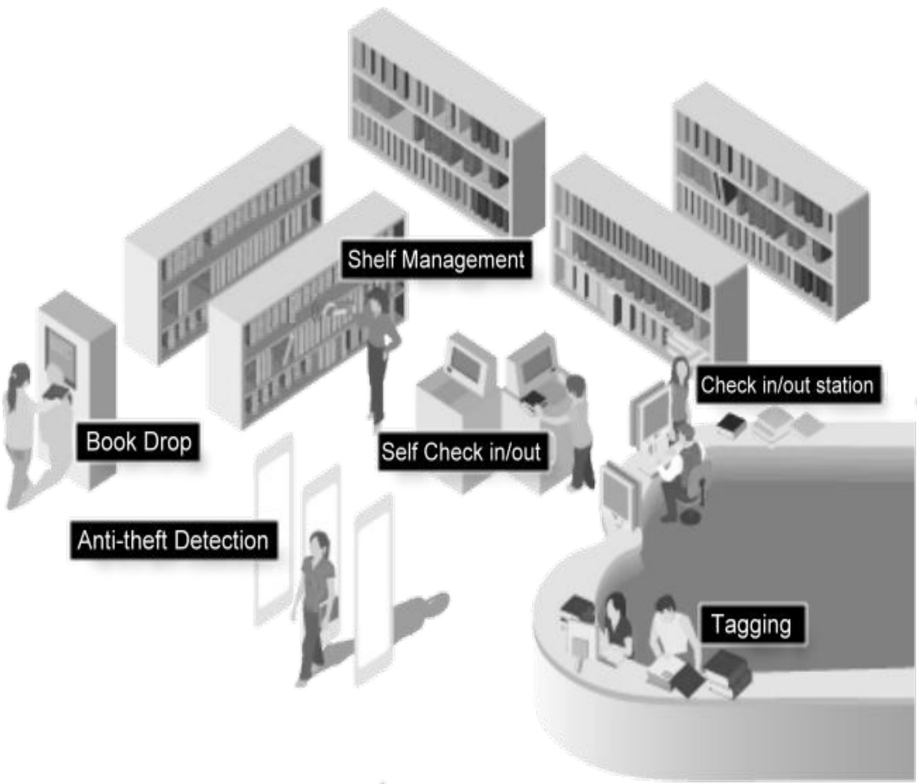
Shelf Management System of Library

The entire shelves of books can be read with one sweep of the portable reader or scanner, which then reports which books are missing or mis-shelves. It also has the ability in stock taking of items of the library holdings and search for individual books requested.

Book Drops in the Library
In the book drop station, the reader reads the tags and uses the sorting system to return the books to their proper shelves. This is convenient for the patron in returning library items at any time. The drop can be mounted anywhere even outside of the library, the users have the advantage of returning the borrowed book(s) even when the library closed.

Anti-Theft Detection of the Technology
This device has the ability of tracking items of about one meter and when borrowed items pass through the devices, it will sound an alarm and light on the exit gate. This is done with the help of RFID tags embedded in the library items.
The RFID library management system is presented in figure 1.1 as discussed above

Figure 1.1 Library RFID Technology Management Systems



Components of RFID Technology

The overall RFID system has three (3) components as discussed as follows;
RFID tags / transponders; this is a small electronic devices which is able to store information and transmit it to some several meters. When this tag senses a signal, the signal would immediately be transmitted a query signal to the reading devices and the reading devices will transmit the information received to a server for processing. According to Henrichi (2008), RFID tags provide the same functionality as barcodes but usually have a globally unique identifier; it also provides a means to identify objects having tags attached. It has been argued in the report of Deborah (2010) that the use of RFID tags in the library would facilitate the tracking of individuals and their reading materials and infringe on library users right to privacy and freedom of expression. The tag has three (3) components namely;

(i) Antenna
(ii) Microchips
(iii) Encapsulation / packaging

The tag is presented below in figure 1.2

Figure 1.2 Library RFID Tags

Readers

The RFID readers are mounted on the entrance and exit doors at the gate of the library in order to send and receive information from the tags. The readers are of two kinds;
4.1.1 Stationary readers
4.1.2 Handheld readers / scanners

According to Svimalraj (2015) the readers have the capability to read up to 15 tags at a time even if direct line of contact between the reader and the code is provided, they can read tags even if the books are carried in bags. In the view of Rathnasabapthy (2009) using RFID readers to check in return items while on a conveyor belt reduces staff time.
The readers are presented below in figure 1.3 and 1.4

Figure 1.3 Library RFID Readers

Figure 1.4 Handheld readers/scanners

Backend Systems
This system performed the function of upgrade towards newly arrived tags and reader technology. The application can easily cope with old tag and the reader's technology. It can also handle many other kinds of auto-id technology.

The State of Academic Libraries in Nigeria

The main objectives of academic libraries in Nigeria are to select, acquire, organize, preserve and disseminate relevant and up to date information resources to its users. The libraries have a large number of information resources, high number of users and inadequate number of library staff, the number of resources and usage is always increasing; as a result, the libraries stand to be vulnerable to many forms of crimes and security challenges such as:

i. Mutilation of information resources
ii. Theft of information resources
iii. Miss-shelving of library resources
iv. Impersonation of library card or identification card
v. Duplicating of library stamps
vi. Vandalism
vii. Defacement
viii. Arson

These crimes could deprive many users from accessing the resources and would not allow them to achieve their information needs. Hence, installment of the Technology system to the Nigerian academic libraries is necessary for the reasons itemized below;

Reasons for Installation of RFID Technology to Academic Libraries in Nigeria

1. It is reliable, effective and efficient in book circulation management system of the library
2. It has the ability to locate specific items and without wasting much time.
3. It improves staff productivity in the library
4. It brings adequate security to the library collection
5. The technology is faster, easier and more efficient to track, identify, monitor and control the management of library resources
6. It has the advantage of self-charging and discharging of borrowed/returned books
7. It is easier in stock verification in the library
8. It reduces damages and theft of library resources

Conclusion

The traditional ways of check in and out of the library patrons is becoming obsoletes and inefficient, it could be very difficult to replace some of the expensive information resources that are stolen in academic libraries in Nigeria, this is because the library may not have the money to purchase a replacement copy or a copy may be out of print. The best way of dealing with insecurity issue in academic libraries is to deploy electronic security system, the technology is expensive and it is economical in its management and reduces the number of staff in circulation. It saves money and brings quick return, it also reduces the number of staff injuries in the work place while working. It is a strong and reliable security technology and has minimal vulnerability to damage; there is also efficiency in the inventory. The technology can be installed to secure expensive resources in the library from theft, mutilation, damage or any other forms of crime.

References

Akinyemi L. A. et al (2014) Design and Development of Radio Frequency Identification (RFID) Based Library Books Security Systems. African Journal of Computing and ICT Vol. 7. No. 2 June, 2014.

Deboarh Caldwell-Stone (2010) RFID in Libraries, Library Technology Reports November / December 2010 www.alatechsources.org.

Henici Dirk (2008) RFID Security and Privacy, Concept, Protocols and Architectures Springer, New Delhi, India.

Keshijro K. K., Balogun W. A., Oyetola J. B, OmogoyeS.O. (2016)Development of RFID Library Management Information System. American Journal of Engineering research (AJER) Vol. 5, Iss. 4 PP. 158 – 160 www.ajer.org.

Linda Howard (2007) “RFID Technology in the Library Environmental”, Geogia Library Quarterly Vol. 44, Iss. 1, Article 6, Available at http://diigitalcommons.kenessaw.edu /glalvol144/iss.16

Libbest: Library Management systemhttp://www.rfid.library.com

Prabhat Pandey and K.D. Mahajan, Application of RFID Technology in Libraries and Role of Librarian

Rathinasababapathy G. and L. Rajendran (2009) RFID Technology and Library Security: Engineering Challenges. Journal of Library Information and Communication Technology Vol. 1 No. 1

Svimalraj, S. Sameera, S. Sarany (2015) “RFID Based Library Management System, International Journal of Innovative Research in Advance Engineering (IJIRAE) Vol. 2, Iss. 1 www.ijirae.compp 326 – 329

LIBRARIES AND DIGITAL CITIZENSHIP: ADVANCING AN ETHICAL, RESPONSIBLE AND KNOWLEDGEABLE ONLINE CULTURE

Ina Smith
Co-director:
In the Cloud, South Africa

and
Annamarie Goosen
Co-director
In the Cloud, South Africa

Abstract

All citizens of a country should be equipped with digital skills for them to optimally function as digital citizens, functionally contributing to the world of work, and towards becoming lifelong self-learners. Public libraries have a huge user base, and public librarians should be encouraged to equip themselves with the necessary skills to become digital citizens, passing on those skills to users. Adding value to their service offering would ensure that public libraries remain relevant – a matter of "adapt or die." In this paper we look at the rationale behind becoming digital citizens and offering digital skills training and support to users. A draft framework is proposed to be implemented as part of continued professional development as far as digital citizenship concern.

Keywords: *digital citizenship, digital skills, continued professional development*

Introduction

Similar to becoming responsible citizens within a physical world, we all have a responsibility to become responsible digital/online/virtual citizens in an increasingly online world. Policing online behavior is however far more difficult, and policies and laws in different countries are not always clear and most still in development. The result is freedom of speech which often ends up in abusing the freedom, resulting in unethical behavior, sometimes unconsciously and unintentionally. Sending responsible and ethical information and digital literate/competent learners out to university, to work and to the world in general, is becoming more and more important. If not digital competent when leaving school, there is a risk that a large proportion of these learners might be left behind because of a lack of digital competence increasingly required for future employment and studies. “No one being left behind” is one of the objectives part of the Agenda 2030 Sustainable Development Goals, and this paper proposes that libraries can play an important role in terms of citizens not being left behind in terms of digital skills/citizenship/competence development.

African countries have a lot of work to do still, and ICT will not resolve all of Africa’s education and employment problems. And although the African Digitalisation Maturity Report 2017 has indicated that South Africa has the highest level of digital literacy on the continent, it is not necessarily at the desired level by far when compared internationally. ICT can help to fundamentally change the current paradigm of skills development systems (d’Aiglepierre, Aubert & Loiret, 2017). Compared to developed countries such as Australia, African countries are not the only ones facing challenges as far as digital skills are concerned, although it might be for different reasons. Leod & Carabott (2016) reported that Australian teenagers are increasingly struggling to achieve the basic level required in information and communication technology (ICT), with only around half (52%) of students in Year 10 achieving the minimum standard of digital competence. The study by Leod & Carabott (2016) indicated that it is largely due to the lack of teachers’ competency in this area. It is expected to be a similar challenge in African countries although a formal study has not been conducted this far, in addition to a lack of ICT and Internet infrastructure in schools and public spaces such as libraries.

To assist teachers and librarians with advancing digital literacy/competence among citizens in general and specifically school learners, a digital competence curriculum framework for African librarians has been developed keeping the NIED Information and Communication Syllabus Grades 4 – 7 and the UNESCO Media and Information Literacy Curriculum for Teachers (2011) in mind. Competent teachers and librarians alike are expected to increase the percentage of competent learners, ready in terms of online and lifelong learning, reading and research. This paper focuses on equipping librarians (but also teachers) in South Africa with digital literacy/competence/citizenship skills in order for them to pass on skills in high demand to citizens (users from all sectors), but will also benefit teachers and librarians from other African countries.

Rationale behind Promoting Digital Citizenship

Digital technology is developing faster than what we can think, with new applications and tools programmed every day. The future of jobs require solid digital skills, and there is not one job where digital skills are no longer a requirement. Flexible use of digital technology has become crucial for survival, and should be regarded as important as reading and writing, taught from a very young age. We can no longer control the use of the various digital technologies, but we – as librarians and teachers – can assist with empowering and creating responsible users for the future, building new thinking on existing good practices and standards. Although learners are digital literate in the sense of using social media and sharing personal information online, and although they are good at figuring out new tools, they often lack the skills to conduct sound research and distinguish between trusted and fake information on the web, a trend that is increasingly worrying, also in the world of scientific and formal research at research intensive institutions. The lack of school libraries because of various reasons contribute to the information and online research skills of school leavers being in a terrible state, leaving them behind. Where schools have the financial resources, especially in privately funded schools, learners are to a certain extent introduced to use online digital technology to advance their learning. But once again, it is the majority and average learner that stays behind, an issue that is also to be addressed according to the 2030 Agenda for Sustainable Development where it strives towards achieving goals for no one to be left behind in terms of learning and access to information to empower themselves, and to become better citizens who can take good care of themselves.

A question that might come up, is why don't citizens go for training at a private training institution, or why can't they be taught the necessary skills when entering the world of work or further studies. It is not that simple, since many of the training institutions are not accredited – in the case of South Africa by the South African Qualifications Authority (SAQA), and the training provided by these institutions are often highly expensive and not contextualized according to the research needs experienced for citizens to remain lifelong learners. When it comes to universities, it is expected that the new students are already digital literate, leaving them to their own devices to survive. Often libraries present introductory courses, but being a new student is often so overwhelming, and by the time the student actually need to apply what they were taught at the beginning of the year, it has long been forgotten.

In addition to the need for digital skills development, there is also the opposite side of the coin, namely people who no longer see the need for libraries, and regard libraries as obsolete (Cronjé 2015). Although online tools such as Google has made it much easier for all to find information, there are so much more to it than just finding the information. In order to remain relevant, libraries should find new ways to use Google and other online tools to their benefit, and to now focus on the additional skills required within an online world. A constant awareness of new trends and technologies is required by librarians, and for them to continue to remain relevant and provide optimum services, they need to stay ahead and be able to advise citizens as to how to apply new technologies within different sectors of life, constantly aligning the profession. A public librarian might for example in one day receive inquiries from a medical doctor, a primary school learner, a hairdresser and a journalist. If there is no computer training centre, and if the library is unable to assist with support, where would these people go to find quality information, collect and analyse it, interpret online licenses, understand plagiarism and intellectual property rights, reference resources, evaluate the quality and trustedness of an online resource, and learn how to make newly generated content available online themselves?

Post-school and university library schools need to work with the private sector to adapt curricula, and to prepare students studying teaching or library services to build on new trends. Sometimes the quality of students attracted to selected library and teaching schools are indicative of the content and quality of the curricula taught by these schools. To conclude, it is of great importance that library and teaching schools revitalize their teaching curricula in line with new developments, and this should be done on a regular basis. Too often lecturers presenting at university are not even able to compile a professional presentation themselves, and have to rely on students to assist. Citizens from all sectors should become digital literate citizens, and take responsibility for their own learning. If not, they will struggle to survive in an increasingly digital driven society, making sure technology is used to advance society and the sustainable developmental goals, and not become a weapon or a barrier towards learning, creating an even bigger divide between the north and the south.

What is Digital Citizenship?

Studying the literature, reference is made to digital citizenship, digital literacy, digital competence, and more. For the purpose of this paper, *digital citizenship* will be used, which will also include digital literacy and digital competence, as well as all other terms used to refer to digital skills and the application thereof in an online environment.

The Merriam-Webster online dictionary defines a citizen as:

1: an inhabitant of a city or town; *especially* one entitled to the rights and privileges of a freeman

2a: a member of a state
b: a native or naturalized person who owes allegiance to a government and is entitled to protection from it
3: a civilian as distinguished from a specialized servant of the state

According to Wikipedia citizenship is the status of a person recognised under the custom or law as being a legal member of a sovereign state or part of a nation. Where a person does not have citizenship, the person is said to be stateless. In the case of the Internet, it is fair to say that all individuals accessing and using the Internet have multiple citizenships, making it difficult to apply the custom and law of one specific country to the online usage behaviour of individuals from all over the world. Not only is international law and policy required, but individual countries, business and organisations are also expected to align to international best practice. The W3C Code of Ethics and Conduct (W3C being an international community working towards better web standards) is a useful guide to define accepted and acceptable behaviors, and to promote high standards of professional practice.

Mike Ribble (Oxley 2010) defines digital citizenship as "the norms of appropriate, responsible behaviour with regard to technology use". He has analysed the types of behaviour which comprise digital citizenship, and categorised these into 9 elements:

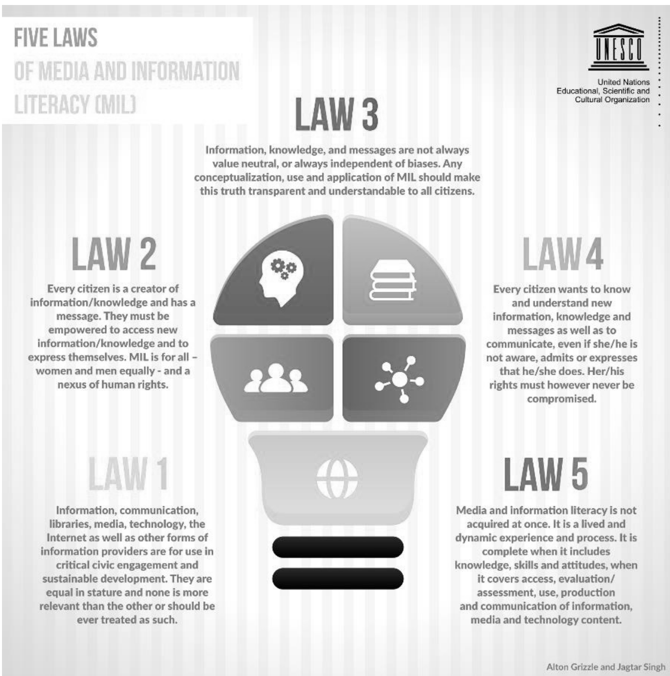
1. Digital Etiquette: electronic standards of conduct or procedure.
2. Digital Communication: electronic exchange of information.
3. Digital Literacy: process of teaching and learning about technology and the use of technology.
4. Digital Access: full electronic participation in society.
5. Digital Commerce: electronic buying and selling of goods.
6. Digital Law: electronic responsibility for actions and deeds.
7. Digital Rights & Responsibilities: those freedoms extended to everyone in a digital world.
8. Digital Health & Wellness: physical and psychological well-being in a digital technology world.
9. Digital Security (self-protection): electronic precautions to guarantee safety.

In addition to being a responsible citizen, UNESCO states that individuals should be empowered to understand the functions of media and other information resources (providers), be able to critically evaluate the content from these, and be able to make informed decisions as users and producers of information media and content. Equitable access and contribution to online content lies at the core of our right to freedom of expression and information.

From the above it is clear that digital citizenship needs a much broader approach, than merely referring to "the norms of appropriate, responsible behaviour with regard to technology use". We are of the opinion that the definition for digital citizenship should be expanded to also include digital access and contribution, skills and digital applications, across the Internet. Therefore – the definition we propose:

"Digital citizenship refers to any individual utilising the Internet according to international custom and law, applying the norms of appropriate, ethical, and responsible behaviour with regard to technology use, continuously developing and applying the required competence to use, access and create information media and content, and continuously developing and using technology for the purpose to create a positive learning, research and work environment towards a democratised and sustainable world."

The above coined definition integrates both the 9 elements of digital citizenship by Mike Ribble (Oxley 2010), as well as the UNESCO 5 laws of information and media literacy:



Draft Proposed Curriculum Framework

The following curriculum framework is proposed, based on the NIED Information and Communication Syllabus Grades 4 – 7, the UNESCO Media and Information Literacy Curriculum for Teachers, Mike Ribble's 9 elements of digital citizenship, and the UNESCO 5 laws of information and media literacy. It is proposed that it be included as part of library school curricula at higher education institutions, but also as part of continuous professional development of librarians on the African continent, across the various sectors.

Theme	Example Competencies
Digital law/ethics/etiquette	Right to free speech Law applicable to Internet use Email etiquette Unethical behaviour incl. plagiarism
Digital rights/responsibilities	Copyright (Intellectual Property) Licensing Citizen journalism Citizen science
Digital skills	Using a computer operating system e.g. Windows, Linux Online content management (incl. files & folders) Conducting word processing e.g. MS Word, OpenOffice Writer Working with spread sheets e.g. MS Excel, OpenOffice Calc Compiling presentations e.g. MS PowerPoint, OpenOffice Impress Designing & Compiling Blogs & Web Pages e.g. Wordpress Develop online collections with useful resources, building digital libraries Using & developing applications, application programming interfaces (APIs) Basic programming skills Digital administration e.g. Intranet, library management
Digital communication	Communication process/skills Scholarly communication Citizen science Social media Webinars, podcasts, vidcasts Email & mailing lists Book/manuscript publishing e.g. Open Journal Systems, Open Monograph Press Conference/event hosting e.g. Open Conference Systems Crowdsourcing & Collaboration

	Online marketing Mobile literacy
Digital literacy (incl. access to resources) & research	Research (lifecycle, accessing resources): research problem, process & organise information, citing resources, deciphering information for authenticity, presenting information in different formats and styles (digital communication). Data curation lifecycle (incl. analysis, visualisation) Digital curation lifecycle Metadata Persistent identifiers Media types available on the Internet
Digital commerce	Compiling budgets e.g. MS Excel, OpenOffice Calc Using online payment systems e.g. Paypal Online business: buying & selling
Digital health, wellness, security	Personal health (mental & physical incl. online bullying etc.) Taking care of e-devices (incl. anti-virus programmes) Identity management Electronic waste & management thereof
Digital life-skills	Providing guidance on careers, entrepreneurship, job creation Games & gaming Mentorship Project management Reading Time-management Trouble-shooting incl. network, printing etc. Train-the-Trainer incl. learning management systems e.g. Moodle Storytelling
Digital access	Access to the Internet as a human right & campaigns Awareness creation by libraries

Conclusion

To remain relevant, the existing role libraries – and specifically public libraries – play, has to be challenged. For citizens to remain lifelong self-learners, they need to become knowledgeable about the research process, and should be able to use the Internet in such a way that they become empowered and lifelong learners, not being left behind. Librarians play an important role in developing individuals to:

"…. *utilise the Internet according to international custom and law, apply the norms of appropriate, ethical, and responsible behaviour with regard to technology use, continuously develop and apply the required competence to use, access and create information media and content, and continuously develop and use technology for the purpose to create a positive learning, research and work environment towards a democratised and sustainable world."*

A culture of change needs to be established, with librarians constantly and dynamically adapting to changing user needs aligned with changes in the digital environment, the digital becoming part of our daily life as a matter of relevance and survival, but also to do our work better and in a more productive and professional way. Guiding users and steering them towards becoming lifelong self-learners the only sustainable way to keep up with all changes in the world we live.

References

African Digitalization Maturity Report 2017. (2018). Available at: http://www.siemens.co.za/pool/about_us/Digitalization_Maturity_Report_2017.pdf [Accessed on 6 Jan. 2018].

Cronjé, J. (2015). How good librarians have made themselves obsolete to some users. *The Conversation*. Available at: https://theconversation.com/how-good-librarians-have-made-themselves-obsolete-to-some-users-46706 [Accessed on 6 Jan. 2018].

D'Aiglepierre, R., Aubert, A. and Loiret, P-J. (2017). How digital technology can help reinvent basic education in Africa. *The Conversation*. Available at: https://theconversation.com/how-digital-technology-can-help-reinvent-basic-education-in-africa-85937 [Accessed on 6 Jan. 2018].

En.wikipedia.org. (2018). Citizenship. Available at: https://en.wikipedia.org/wiki/Citizenship [Accessed 6 Jan. 2018].

McLead, A. and Carabott, K. (2016). Students struggle with digital skills because their teachers lack confidence. *The Conversation.* Available at: https://theconversation.com/students-struggle-with-digital-skills-because-their-teachers-lack-confidence-56071 [Accessed on 6 Jan. 2018].

Merriam-webster.com. (2018). Definition of CITIZEN. Available at: https://www.merriam-webster.com/dictionary/citizen [Accessed 6 Jan. 2018].

NIED Information and Communication Syllabus Grades 4-7. (2015). Available at: http://www.nied.edu.na/assets/documents/02Syllabuses/03SeniorPrimary/InformationandComunication/SP_Syllabuses_IC_Mar2015.pdf [Accessed on 6 Jan. 2018].

Oxley, C. (2010). Digital citizenship: Developing an ethical and responsible online culture. Available at: https://files.eric.ed.gov/fulltext/ED518512.pdf [Accessed on 6 Jan. 2018].

Transforming our world: the 2030 Agenda for Sustainable Development. (2015). Available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E [Accessed on 6 Jan. 2018].

UNESCO Media and Information Literacy Curriculum for Teachers. (2011). Available at: http://www.unesco.org/new/en/communication-and-information/resources/publications-and-communication-materials/publications/full-list/media-and-information-literacy-curriculum-for-teachers/ [Accessed on 6 Jan. 2018]

Unesco.org. (2018). 5 laws of information and media literacy. Available at: http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/Events/mil_five_laws_english.pn [Accessed 6 Jan. 2018].

W3.org. (2018). W3C Code of Ethics and Professional Conduct. Available at: https://www.w3.org/Consortium/cepc/ [Accessed 6 Jan. 2018].

THE NEED FOR INTEGRATION OF INFORMATION ETHICS IN UNDERGRADUATE PROGRAMMES: A CASE STUDY OF TUDARCo

Julius Tunsaje Tweve
Senior Lecturer,
Tumaini University
Dar es Salaam College

Abstract

The main objective of this study was to assess the need of integrating Information Ethics in undergraduate programmes in universities. Tumaini University Dar es Salaam College (TUDARCo) was used as a case study. The study was guided by three objectives: first, to examine the awareness of information ethics. The second objective aimed at determining the importance of integrating information Ethics in undergraduate progrommes. Third objective identified the challenges of integrating information Ethics in undergraduate programmes at universities. A phenomenological inquiry approach (Creswell 2013) was most appropriate for this study; given its focus on teachers and students experience and perception of Information Ethics at TUDACo. The study used interview to collect data from teachers and questionnaire for students. Data was processed using the software package (SPSS version 20) in which descriptive statistics methods such as frequencies and mean were used. The results from the study revealed that there is relative advantage of integrating Information ethics to the undergraduate programmes. It was noted that majority of respondents were aware about information ethics. Students need information ethics so as to prepare them to be ethical professionals. Advantages of information ethics, students are expected to have personal ethics such as avoiding plagiarism. Also through information ethics, graduates will be ethical in turn will promote development in different sectors. Challenges also were identified such as security, privacy, copy right infringement, digital divided, rigidity among lecturers and IT advancement. The study recommends the need to all faculties to team up with Department of information studies to share the experience.

Key words: *Information Ethics: Sustainable Development*

Introduction

During the past several decades the robust and rapidly growing field of computer and information ethics has generated new university courses, research professorships, research centers, conference, workshops, professional organizations, curriculum materials, books and journals. As the time goes on, information Ethics started to be used in information science, computer ethics and management information system. According to Capuro (2012), Computer and Information Ethics states the importance of ethics in variety topics which are computer crime, copyright, privacy, software reliability, artificial Intelligence and E-commerce.

Consequently information and communication (ICT) has affected in good ways and bad ways, community life, family, life and human relationship. The more specific term computer ethics has been used to refer to applications by professional philosophers of traditional Western theories like utilitarianism or virtue ethics to ethical cases that significantly involve computers and computer networks. Computer ethics also has been used to refer to a kind of professionals apply codes of ethics and standards of good practice within their profession. In addition other more specific names like cyber ethics and internet ethics have been used to refer to aspects of computer ethics associated with the internet.

Statement of the Research Problem.

In the rapidly changing environments in which information professionals work and in which iSchool educators teach, ethical issues are increasingly being raised, demanding attention and efforts toward resolution. Of particular interest for iSchools and the information field are those related to information throughout its life-cycle. Originally called the ethics of information in society, this topic has more commonly been referred to as Information Ethics (IE) . Beginning in 1997, conferences on the Ethics of Electronic Information in the 21st Century were held at the University Memphis.

Lipchak, (2002) describe that information ethics system need to have characteristics which are determining information needs, consider intellectual property, creating and acquiring information, distributing and sharing records and information, evaluating and using information to solve problems and documenting activities and actions. Other characteristics include determining responsibility for managing and protecting records, identifying, organizing, storing and disposing records, training and other resources and evaluating the performance of the record system. There is a need to introduce or integrate information ethics in undergraduate programs so as to groom ethical professionals not only who will value ethical issues in information services but also ethics in general. The purpose of this study was therefore based on identifying the awareness of students on Information Ethics and how they can benefit from it when added to their courses.

Research Objectives

The main objective of this study was to assess the need of integrating Information Ethics in undergraduate programmes a case study at Tumaini University Dar es Salaam College. The specific objective of the study aimed to.

i) Examine the awareness on information ethics at Universities by students of undergraduate programmes.
ii) Determine the importance of integrating information ethics in undergraduate programmes
iii) Identify the challenges of integrating information ethics in undergraduate programmes.

Literature Review

Introduction

It has been proved that advancement in information technology is accompanied by at least one ethical quandary. From Face book to email updates, computer users are unaware of the fine balance between ethics and profit struck by providers. Software developers, businesses and individuals must think about the rights and wrongs of using information technology every day. The fundamental issues underlying the world of information technology are the end user's expectation of privacy and the provider's ethical duty to use applications or email responsibly. According to Carbo (2010), Information ethics is the field that investigates the ethical issues arising from the development and application of information technologies. It provides a critical framework for considering moral issues concerning informational privacy, moral agency (e.g. whether artificial agents may be moral), new environmental issues (especially how agents should one behave in the info sphere), problems arising from the life-cycle (creation, collection, recording, distribution, processing, etc.) of information (especially ownership and copyright, digital divide). Information Ethics is related to the fields of computer ethics and the philosophy of information. Dilemmas regarding the life of information are becoming increasingly important in a society that is defined as "the information society". Information transmission and literacy are essential concerns in establishing an ethical foundation that promotes fair, equitable, and responsible practices. Information ethics broadly examines issues related to ownership, access, privacy, security, and community. Kerr, Michael (2010) Information technology affects fundamental rights involving copyright protection, intellectual freedom, accountability, and security, Joan Reitz M. (2010). A new field has recently sparked a great deal of attention from philosophers all over the world. With the explosion of the Internet into the most widely used information medium today, the need to study the correct computer ethics has become imperative to our future as computer users. As the technology underlying computers continues to change, so to must our way of going about ethically using computers to further our society. There are many different areas where the study of computer ethics could be considered applicable.

The use of computers in large corporations is just one sector of computer ethics that needs to be fully understood. As computers are essential to the way big business makes their yearly profit, they can also serve to be enticing devices for employees to use as their own personal hubs for entertaining themselves. Many people have lost their jobs due to their complete lack of ethical behavior in the realm of using their computer at work for strictly business purposes. In large corporations, it becomes more difficult to monitor individual usage, and it is wasting upper-level management's time to have to deal with a computer ethics issue, Carbo (2008). There is also the matter of using computers for criminal reasons. Due to the very nature of the information that is transferred through computers, they lend themselves to being targets for unsavoury characters to attempt to exploit. From implantable viruses to the most advanced hacking software, criminal behavior in relation to the use of computers is a burgeoning problem that has been, and will continue to be, stringently addressed. While the study of computer ethics is not necessarily an exact science, it continues to develop and progress as more information becomes available about the technological power that computers can harness. As the world continues to rely more and more on the transmission of data between computer systems, computer ethics will undoubtedly become more of a focus for many of the world's most schooled philosophers.

The field of computer ethics is a new and growing one. Computer ethics is a recent development, closely related to information ethics. The two fields are related like the concepts of theory and practice. The conceptual foundations of computer ethics are investigated by information ethics, while the practical applications of information ethics are carried out by computer ethics. Some common questions addressed by both fields have to do with copyright infringement of software, such as online music and movie piracy.

An Overview of Information Ethics in Developed Countries.

According to Capuro (2006) America in the mid of 1940s, there was development in science and philosophy that led to creation of new branch of ethics that was named as Computer Ethics or Information Ethics. Capuro, explain that during the Second World War together with his colleagues helped to develop electronic computers and other new and powerful Information Technologies. While involved in war efforts, Wiener and other colleagues created a new branch of applied science that Wiener named it as cybernetics. When the war was raging, Wiener foresaw enormous social and ethical implications of cybernetics combined with electronic computers. He predicted that at the end of the war, the world will pass through a second industrial revolution and automatic age that different potential for good and for evil that will generate a number of new ethical challenges and opportunities.

In 1948, Wiener wrote the book Cybernetics in which he explained new branch of applied science and identified some social and ethical implications of electronic computers. Later on in 1950, Norbert produces a book The Human Use of Human Beings in which it explored a number of ethical issues that computer and Information Technology would likely generate. The issues discussed in those two books include topics that are important today that are computers and security, computers and unemployment, responsibilities of computer professionals, computers and religion, information networks and globalization, teleworking, merging of human bodies with machines, robot ethics and artificial intelligence.

Wiener did not think of creating new branch of ethics and did not provide metaphilosophical comments about what he was doing while analyzing an information ethics issues or case. Instead he directly analyzes. He had his own way of analyzing information ethics issues and resolving them. The methodology in information ethics that he uses were, identify an ethical question or case regarding the integration of information technology into society. Typically this focuses upon technology- generated possibilities that could affect life, health, security, happiness, freedom, knowledge, opportunities or other key human values. Clarify any ambiguous ideas or principles that may apply to the case or the issue in question. If possible, apply already existing, ethically acceptable principles, laws, rules and practices that govern human behavior in the given society. If ethically acceptable precedents, traditions and policies are insufficient to settle the question or deal with the case, use the purpose of human life plus the great principles of justice to find a solution that fits as well as possible into the ethical traditions of the given society.

This way of doing information ethics does not require the expertise off a trained philosopher even though sometimes expertise might prove to be helpful in many situations. Any person who functions successfully in reasonably just society is likely to be familiar with the existing customs, practices, rules and laws that govern a person's behavior in that society and enable one to tell whether a proposed action or policy would be accepted as ethical. So those who must cope with the introduction of new information technology whether there are computer professionals, business people or teachers is a must.

In 1976, Wiener M, noticed some ethical questions and problems that exist in different field, that would not have existed if computers had not been invented. He concluded that there should be another branch of applied ethics to field like business ethics. He later developed an experimental computer ethics course designed for students in University level computer science programs. The course was very successful.

In 1995, Floridi (2008), combined ideas of Wiener to bring the term Information Ethics. In developing the theory of Information Ethics, Floridi argued that the purview of computer ethics indeed of ethics in general should be widened to include much more than simply human beings, their actions, intentions and characters. He offered macro ethics which is similar to utilitarianism, deontologism, contractualism and virtue ethics because it is intended to be applicable to all ethical situations. On the other hand Information Ethics is different from these more traditional Western theories because it is not intended to replace them but rather to supplement them with further ethical considerations that go beyond the traditional theories and that can be overridden, sometimes by traditional ethical considerations. The name information ethics is appropriate to Floridi's theory because it treats everything that exists as informational objects or processes.

Floridi's Information Ethics theory based upon the idea that everything in the info sphere has at least a minimum worth that should be ethically respected even if that worth can be overridden by other considerations, the theory suggested that there is something even more elemental than life namely being, that is the existence and flourishing of all entities and their global environment and something more fundamental than suffering namely entropy. The theory holds that the being or information has an intrinsic worthiness. It substantiates this position by recognizing that any informational entity has a Spinozian right to persist in its own status and a Constructionist right to flourish example to improve and enrich its existence and essence. James M, (2005) produced a classic paper known as 'What is Computer Ethics?' This was published in a special computer ethics. The approach is practical theory that provides a broad perspective on the nature of Information Revolution. This later led to existence of Information Ethics.

An Overview of Information Ethics in Developing Countries.

Based on Houtondji (2002) ideas in most of African countries Information Ethics is a young academic field. Not much has been published on the role that African philosophy can play in thinking about the challenge arising from the impact of ICT on African societies and culture. Most research on ICT from an ethical perspective takes it from Western philosophy. According to Broodryk,(2004), explains the concept of Ubuntu in Africa which has relationship with Information Ethics. Ubuntu refers to African worldwide that drives much of African values. Ubuntu has ethical principle that has already been applied in South Africa such as politics, business which consist of team work and collective learning. Also corporate governance that consist of fairness and collectiveness. Main moral responsibility of African academics is to enrich African identities by re-creating African Information and Communication traditions.

On the other hand Adam (2005) point out that information ethics is the field that investigates the ethical issues arising from the development and application of information technologies. It provides a critical framework for considering moral issues concerning information privacy, moral agency (example whether artificial agents may be moral), new environmental issues (especially how agents should behave in the info sphere), problems arising from the life-cycle (creation, collection, recording, distribution, processing) of information, especially ownership and copyright in the environment of digital divide). Indeed this aspect in Africa is still challenging.

An Overview of Information Ethics at University.

According to Woodward D, (1990) in developed countries, Information Ethics is used as a tool which led to professional Ethics. In University, it is designed to help students to develop skills and knowledge that help in engaging in ethical issues in their working lives. In some universities, the course is taught online, making it appropriate and available for employees who are studying. The course has attracted students from background in Law, Engineering, Actuarial Finance management, Business management and University administration.

According to Miller (1971), lecturers at university level, the first moral obligation of lectures is to prepare, teach and evaluate students effectively. This would include preparing course outlines, schemes of work and setting and marking course work and examinations. Miller again insists the good qualities of an ethically based lecturer; coming to work regularly and on time, being well informed about their student and subject matter, planning and conducting classes with care, regularly reviewing and updating instructional practices, cooperating with, or if necessary, meeting and discussing with parents of underachieving students; cooperating with colleagues and observing school policies so the whole institution works effectively, tactfully but firmly criticizing unsatisfactory school policies and proposing constructive improvement.

Floridi (2006), argued that information ethics is a necessary part of undergraduate information literacy education, particularly at the introductory level. Many research practices taught at this level are, at their base, ethical considerations- proper citation, for example and the ethical dimensions of these skills should be made explicit. Even the simplest bibliographic research is deeply entangled in the increasingly complex realities of the information society.

Goldman (2000) explained that there is more debate over the extent to which universities can develop students' ethical behavior and social responsibility than any other graduate skills or attributes. They are not really skills rather they are attribute or qualities yet there is no doubt they can be learned and developed in a university context. Most universities have a policy on Academic misconduct, in which ethical behavior and social responsibility are discussed. An understanding of ethics, social responsibility and cultural diversity provides students with the ability to consider the impact of their conduct and actions. At university students are required to behave ethically and responsibly in relation to cheating in examinations or assessment items, acknowledging the intellectual property rights of others, falsifying or improperly obtaining research data and assisting other students to cheat. Students are also expected to treat university staff with courtesy at all times contribute to a culture of respect and tolerance between students and demonstrate respect for difference. Students need to become aware of the values and attitude that underpin human behavior. By learning to think critically, questions assumptions, make informed decisions and use reason, students can develop the abilities necessary to function as ethical and socially responsible citizens. It is not the university's role to tell students what to do in relation to ethical behavior and social responsibility. The university's role is to help students make their own decisions by stimulating discussion. Universities are charged with the task of helping people to develop to the fullest potential and be the best they can personally be. It is not the university's role to do that for its students but to help the students do that for themselves. A university education should enable graduates to make a positive contribution to their communities.

An Overview of Information Ethics in Tanzania.

Information and communication technology (ICT) is of strategic importance and essential functional requirements for many institutions of higher learning. In Tanzania, ICT is achieving a breakthrough in management and teaching of online learning, which helps to cater for the increased student population. However the security of the information being processed, stored and exchanged is a growing concern to the management as the dependence on ICT for most of the institutions' core services functions is increasing. In Tanzania Information ethics has developed its own version of consideration. Every advancement in information technology is accompanied by at least one ethical quandary. Mostly in Tanzania computer users are unaware of the fine balance between ethics and profit struck by providers. Software developers, businesses and individuals must think about the rights and wrongs of using information technology every day. The fundamental issues underlying the world of information technology are the end user's expectation of privacy and the provider's ethical duty to use applications or email responsibly. Tweve (2013) comments that information ethics is very useful simply because, it is useful in technology for security purpose and by which we can't do any illegal work. It is very useful to create a good reputation in any organization or any field that is why there is a need to follow code of ethics in each and every field. However, many universities in Tanzania have not integrated information ethics in undergraduate programmes.

Importance of Information Ethics at University

According to Carbo (2000) describe the importance of Information Ethics such as, help to know how to create, find, manage, access, preserve and use of information effectively provide with information professional. In details Carbo described that to students it build them to know how to be good creators, managers and users of information properly without practicing illegal practice such as plagiarism. Plagiarism is said as the main problem in information sector so as students they have to be prepared so as to be good professionals.

Help in becoming professional librarians and information professional; Information ethics is said to be among the important pillar in helping the students to be professional librarians for those who are studying library studies. For this reason shows that information ethics is very important and students must learn that in order to achieve well.

Help in maintaining of code of ethics; the whole information ethics helps both students and lectures to maintain the code of ethics. In any place whether it is organization or university ethics must be maintained. And in order to maintain information ethics is said to be used since it is related much with different courses.

Addition of knowledge to students; based on Carbo (2000) agreed that information ethics add knowledge to students since they will be able to learn different other things according to their courses. This mainly helps in building their professional and be more useful in jobs in future days. Precisely, the same Carbo further described that all professional associations in place have to guide and form practitioners behavior and enable them to resolve ambiguous or contentious issues concerning ethical conduct.

Challenge of Integrating Information Ethics at University

Smith (2010), the field of information ethics is dedicated to the critical reflection on the ethical values and practices related to the production, storage and distribution of information, as well as the ethical implications of the information systems, infrastructures and policies increasingly embedded in modern culture and society. The scope of information ethics encompasses the broad relationship between information and human right and responsibility, including ethical issues related to information production, information collection and classification, information storage, access and dissemination, information law and policy. Thus information ethics has become a central concern among information professionals as well as its standards used to accredit graduate programs in library and information studies.

Despite the recognition of information ethics by professional organizations and accrediting authorities, coupled with calls for the integration of information ethics courses in undergraduate programmes. Example in America the studies shows that in their library, programs offered courses and only a few of these programs required students to take a course on information ethics.

Also Smith (2010) described that while renewed attention on integrating information ethics within graduate library studies programs is both welcome and necessary, it is only a partial solution to ensuring that future information professional and the users they interact with participate appropriately and ethically in our contemporary information society. Along with focusing on graduate Library studies curricula, information ethics must become infused in multiple and varied educational contexts, ranging from elementary and secondary education, technical degrees and undergraduate programs, public libraries, through popular media and within the home.

Fallis (2007) described that teaching information ethics in these diverse setting and contexts brings numerous challenges and requires new understandings and innovative approaches. Panel of educators and researchers were convened to foster a discussion in how to best incorporate information ethics education across diverse contexts, how to develop innovative educational methods to overcome the challenges these contexts inevitably present.

According to Froehlich (1992) describe one of the challenge of Integrating information Ethics at University in America is how to make the course attractive and relevant to students. This means if the course is to be integrated is to make it relevant to students for easy understanding. Again Froehlich goes far by explaining ‘Practice what you preach’. This is to insist on how to make the course relevant for easy understanding of Information Ethics.

Methodology

A phenomenological inquiry approach (Creswell 2013) was most appropriate for this study; given the fact that its focus on teachers and students experience and perception of information ethics. In light of the area of the study was conducted at TUDARCo. The researcher used a case study design because the case study design enabled the researcher to review deeply few cases in the curriculum used to show how information ethics is covered. Qualitative and quantitative research approaches were employed during the research. Qualitative research approach was largely employed. Qualitative approach was used because the approach gives an opportunity for problems to be studied in some depth and quantitative enabled the researcher to collect facts and study their relationships in order to find sources and solutions of the facts. The approach enabled the researcher to use different methods such as interviews and questionnaire during data collection. Flexibility when using qualitative method may allow day-to-day correction of the problems arose during the study. This enabled the researcher to amend and modify the structure/plan of the study as the research process proceeded.

The targeted population for this study was divided into two groups of people namely lecturers and students. Both groups were asked questions related to awareness on the concept of information ethics and its importance to students in general. The sample size of the study comprised 50 students and ten lectures from Department of information studies. Students were randomly selected from second year and third year while lecturers were purposely selected. Interview was used for lecturers and questionnaire for students as methods for data collection. Data were analyzed by using SPAA software version 20.

Findings and discussion

This section generally put forward what the researcher entirely found in the field with reference to objectives of the study. It gives the summary of the selected statistics for the overview purpose. It provides comprehensive discussion on the importance of integration of information ethics into undergraduate programmes. Finally it presents the findings on the challenges facing TUDARCo or any university in integrating Information ethics in the undergraduates programmes. Recommendations to be adopted by students and universities about the best way to integrate information ethics in the undergraduate programmes not only in Tanzania but also in any university in Africa have been suggested.

Awareness of Information Ethics at University

The first objective of the study aimed at finding out if the students and lecturers are aware on information ethics being and its benefits. The first question asked respondents if they are aware with information ethics. The findings show that majority 35(70%) of students and all 100% of lectures said they are aware about it. Another question asked to students to point out general benefit of information ethics. The summary of their responses has been summarized in Figure 1 below.

Figure 1: General benefits of Information Ethics

Source: Field Data (2017.)

Notwithstanding the diverse range of benefit of information ethics has, based on the data presented in the findings above, discussions can be made on main benefit of information ethics has to students and lecturers as follows:

No abuse: One of the key findings of the current study is that information ethics expose to students and lecturers that no abuse of information provided. Indeed, many of the students as figure 1 above indicates pointed out that no abuse constituted one of the general benefit of information ethics. Lawton (2013) asserts that critical judgement of the value of information without abuse is guided with information users' understanding of it. He further comments that code of ethics and knowledge of information ethics guide an individual to be ethical. Therefore, information ethics and the code of ethics is imperative in encouraging good behaviour based on integrity approaches.

Respect of privacy: Data from the study show that many of the students and few lecturers in the interview reported that information ethics at university under review were at times students were taught to respect privacy. Lecturers, on their part, when they were asked about how they protect respect of privacy of individuals to prevent them from controlling confidential information, they answered that students were aware that doing so was against established procedures and regulations but there was no hard and fast rule on how the erring individual can be penalised or punished for such misdeeds. Apart from being disrespect the individual faced, Lawton *et al.* (2013) calls upon the professionals to respect the law. It was recommended that acting according in accordance with the law, guidelines, procedures, respecting the constitution and the supremacy of law. Information professionals would not only make their profession noble but also create conditions for commanding respect from both their peers in and their superiors in their respective ministries.

Integrity of information: The findings show that majority of students comment that do not trust all information on the Internet. Parkinson (2001) noted that information professionals need to safeguard the integrity of their profession by reinforcing desirable behaviour and embracing appropriate change. The current study, on the other hand, noted that more than half of the students and lecturers believed that the information professionals had to contend with inadequate integrity among themselves. The current study concurs with Carr (2000), who argues for the promotion of integrity and ethics at the workplace to give employees a sense of worth, integrity and trust. Similarly, the ICA (2005) opines that information professionals adherence to ethical practices tends to translate into issues of authenticity, reliability, integrity and usability. It appears this is the reality that prompted Musembi (2004) to conclude that information professionals fail to adhere to ethical practices because of lack of support from senior management to recognise that information ethics is vital for fostering accountability, integrity, and efficiency in addition to promoting effective decision-making in any sector.

Importance of Integrating Information Ethics

The researcher asked both respondents (lecturers and students) to identify if there is any importance of integrating Information Ethics in University programs. The study aimed to identify the contribution of Information Ethics to the students at University. Students were given clues of the expected answers while lecturers were open ended question. Table 1 below has a summary of the responses from students.

Table 1: Importance of Information Ethics N= 50

Importance	Frequency	Percent
Promote accountability among students	45	90
Avoid plagiarism	45	90
Improve professionalism	44	88
Graduates be ethical	43	86
Inculcate transparency	42	84
Students to have personal ethics	40	80
Increase commitment among students	40	80
Promote development	38	76
To create and find information effectively	38	76
Improve decision making among students	35	70
Improve quality of education	30	60
Maintain responsibilities among students	25	50
Improves reading habit	24	48

Source; Field Data 2017

The data presented in Table 2 presents a clear picture that there are many aspects attached to the importance of information ethics among students that lead to the following observation:-

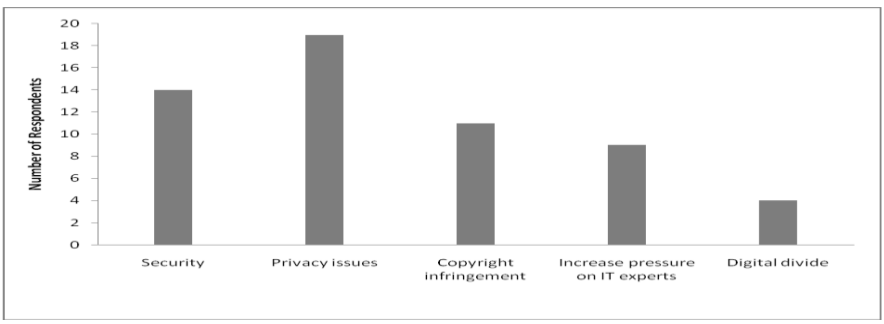
To start with, **promote accountability** among student in universities to reduction of unethical or professional practices. It is evidently shown by respondents that integrating information ethics in undergraduate programmes prospect of reducing academic dishonest. For example, cheating or copying others work pretending theirs. As a result, students are given higher marks as a result are given higher GPAs in turn are given higher post in the organizations. Introducing information ethics in undergraduate programmes will solve such practices. Griffin and Roper (1999) argued about a decade ago that students' adherence to information ethics enhances transparency and accountability to the information professionals. On the other hand, Ngulube (2000) notes that without information ethics there could be no accountability, transparency and efficiency, a situation that creates loopholes for academic dishonest and subsequently loss of confidence to graduates.

Another observation is that **avoid plagiarism** among students at the university; it adds value to user satisfaction in government offices. Findings indicates that many 45(90%) of the students rated highly the importance avoiding plagiarism among students if information ethics is integrated in undergraduate programmes. Similarly lecturers on their part comment that it true that having information ethics courses in undergraduate programmes has helped to avoid plagiarism among students. Marshall (2006) supports the idea of integrating information ethics in university programmes to help students to work diligently. Similarly, Thomassen (2001) observes that without information ethics no effective assessments can be made to students' work and when done it was difficult to establish the set criteria of efficiency and legitimacy among students.

Inculcate transparency; the study findings indicate that many 42(84%) of the respondents rated highly transparency in integrating information ethics in undergraduate programmes. In this respect, majority of lecturers argued that they were transparent in their day to day teaching and other academic operations so as to inculcate transparency among students. Ngulube (2000) underscores the importance of transparency by arguing that without information ethics courses among university students there could be no transparency and efficiency. He further argues that lack of transparency can lead to corruption and loss of confidence among citizens.

Challenge of Integrating Information Ethics

Most of the time, introducing new system or program in an organization or university is a process that may face challenges. In this study, the researcher ask the respondents if they think introducing of Information Ethics in university will face any challenges and what challenges they may face. This section is a result of research objective aimed to identify challenges of integrating Information Ethics in undergraduate programmes. The summary of students' response on challenges summarized in Figure 2 below.



Source: Field data 2017

Figure 2: Challenges of integrating information ethics

Security

With tools like the internet, hackers have found it very easy to hack into any computer or system as long as it is connected on internet. Hackers can easily use an IP (Internet Protocol) address to access a user's computer and collect data for selfish reasons. Also the wide spread of internet cookies which collect information whenever we use the internet , has exposed IT users to high risks of fraud and conflicting interests. Capuro (2006) point out that many big companies use these cookies to determine which products or service they can advertise to us. When it comes to online banking, the transfer of money can easily be interrupted by a hacker and all the money will be transferred to their desired accounts , which affects both the bank and the customers who is using online banking technology. The security also may be affect on information ethics usage among students and lecturers. Universities need to get prepared in advance.

Privacy Issues

As much as information technology has enabled us to share and find relevant information online,. It has also exploited our freedom of privacy. Their so many ways our privacy is exploited. Use of internet webcams, experienced computer users can turn on any webcam of any computer online and they will have access to your private life, many celebrities have been victims of these online stalkers. A good example is Dharun Ravi**a** former Rutgers University student who was spying on his roommate through a webcam. Use of social networks, the main concept of these networks is to connect with new and old friends then share your life with them, however, the loop hole in this is that whenever someone access your shared life data like photos, they can like it and send it their friends who are not your friends, which might expose you to users with wrong intentions to use your data, also some companies are known for spying on their employees via these social networks. The idea of commitment was supported by Kigongo-Bukenya (2007) argues that information ethics increases transparency and commitment among information professionals.

Copyright Infringement

Information technology has made it easy for users to access any information or artifact at any given time. With the increased development of music sharing networks and photo bookmarking sites, many original creators of these works are losing the credibility of their works, because users of IT can easily gain access and share that data with friends. Free music and file downloading sites are popping up on internet every day , lots of original work like music albums, books , are being downloaded for free. In this case one legitimate user will purchase the book, software, web template or music album, and they will submit it to a free download site where others will simply just download that data for free. It is good news for the users because it saves them money, but it harms the original creator of these works. The government has closed some of these sites like megaupload.com, but many are popping up using funny URLs. As noted earlier on Carbo (2008) recommends universities to have genuine information systems software to monitor quality work such as software to test plagiarism.

Increased pressure on IT experts

Since information technology systems have to run all the time, pressure is mounted on IT experts to ensure the accuracy and availability of these systems. Many big organizations which need to operate 24 hours will require a standby IT team to cater for any issues which might arise during the course of operation. According to Carr (2002) comment that this pressure results into stress and work overload which sometimes results into imperfection. Integration of information ethics in undergraduate programmes requires enough availability of computers and experts in the library and computer labs.

Digital divide

Information technology has many opportunities and it has shaped many industries in developed countries; however, developing countries have difficulties of enjoying the same benefits of Information technology. To get these benefits universities have to train their labour and users should also adopt the new culture which is a bit costly in these developing countries. In some remote areas they do not even have power, so information technology tools like computers cannot be used. Tweve (2012) argues that in other sectors like education, most of these developing countries have poor old education systems, so a student will not be aware of new information technologies. This situation proves and recommends the need of integrating information ethics in undergraduate programmes to curb such shortcomings.

Conclusion and Recommendations

Conclusion

All in all, the summary of the findings in Figure 1, Table 1 and Figure 2 portray a general picture that integrating information ethics is very important to facilitate quality of education in universities. This facilitation can be only achieved if students adhere to information ethical practices. This observation call upon all academicians and other professionals, to make sure information ethics is integrated in undergraduate programmes. Having graduates with a package of information ethics will have ethical professionals. It has been proved that ethical professionals in all case facilitate development of a particular sector in turn improve national development.

Recommendations

Students should be willing to study this course since it has a lot of benefit. One among the important benefits is that students' behavior will change from academic dishonest to quality education.

University should think of integrating the course of Information Ethics to all programmes not only the programmme of Information studies. This course will be productive since it has benefit to all students and the university. It will build university reputation and help to increase number of students that are joining the university in turn will produce many competent professionals.

References

Capurro, R. (2006) Towards an ontological foundation of information ethics. Ethics and Information Technology 8(4) pp175-186.

Carr, D. (2000). Professionalism *and ethics in teaching*. New York, NY: Routledge

Carbo, T. (2010) Ethics education for information professionals. Journal of Library Administration 47(3-4) pp. 5-25.

Creswel, J. W., and Plano Clark (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage Publications.

Jones, S., and Blundell, B. (2008) Ethical, Legal and Professional Issues in Computing. London: Middlesex University Press.

Floridi, L. (2008) Information ethics: its nature and scope. In: Van den Hoven, J. and Weckert Eds. Moral Philosophy and Information Technology. Cambridge: University Press,

ICA.(2005). ICA takes part in the World Summit of the Information Society (WSIS)to be held in Tunisia, 16-18 November 2005.

Kigongo-Bukenya I., M. N. (2007). Towards professionalism and commitment in Africa: The case for theory and practice of records management in Uganda. *International Review of Records management,*7 (9), 123-131.

Lawton A., (2013). *Ethics and management in the public sector*. Routledge, London.

Marshall, J.A (2006). Accounting for disposition: a comparative case study of appraisal documentation at National Archives and Records Administration in the United State, Library and Archives Canada and the National Archives of Austria. Un published PhD. Thesis. University of Pittsburgh, Austria.

Morris, A., Jones, G. & Rubinsztein, J. (1993). Entry-level information systems personnel: a
comparative study of ethical attitudes. Proceedings of the 1993 ACM SIGCPR

Musembi, M.(2004). Introduction to records management. Paper read at the directorate of personnel management training workshop for registry supervisors on records management, Machakos, 21-24 August 2004.

Ngulube P. (2000). Professionalism and ethics in records management the public sector in Zimbabwe. *Records Management Journal*, 10 (3),161-173.

Tweve, J. T. (2012), *"Practices of teaching information ethics in Tanzania".* Paper Presented at African Network for Information Ethics (ANIE) Conference, 3rd to 7th February 2012

Tweve, J. T. (2013). "Information Ethics and professionalism Changing Scenario with a national overview of Tanzania". Paper presented at Lex-Informatica 2013: Cyber law/ICT Law/ Information Ethics Conference. Held at University of Pretoria, 4th to 5th April 2013.

Wamukoya, J.(2000). Improvement of public sector records in Ghana, The Gambia and Tanzania: Lessons for Kenyan Archivists. Paper presented during the KNADS Biennial Seminar, Nairobi, 25-29 October 2000.

THE ROLE OF RECORDS MANAGEMENT IN FIGHTING CORRUPTION IN UGANDA'S FINANCIAL INSTITUTIONS

Florence Nakityo Kirinya
Records Manager
Stanbic Bank, Uganda

Abstract

The key principles of corporate governance include transparency, accountability and risk management. Successful implementation of these principles in public and private organisations is dependent on the availability of information. In Uganda today many organisations do not have sound records management systems and the result is the existence of weak governance structures that are characterised as fraudulent and corrupt. This paper discusses the role of records management in fighting corruption in Uganda's financial institutions. The paper argues that good records management is essential for the fight against corruption because a good records management programme ensures availability of information that can serve as evidence to identify abuse or misuse of resources and non-compliance with legal and regulatory requirements. In addition, good records management practices promote efficiency in the operations of an organisation by eliminating bureaucracies and other loopholes that underpin corruption. Using examples from Uganda's financial institutions, this paper attempts to demonstrate the extent to which records management supports the fight against fraud and corruption. The paper also includes literature review that corroborates the examples cited. Recommendations are provided in the conclusion.

Key words: *Accountability; corruption; governance; records management; transparency*

Introduction

Transparency International defines corruption as the abuse of entrusted power for gain. The International Financial Institutions Anti-Corruption Task Force (2006) defines a corrupt practice as the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party. Article 21 of The United Nations Convention Against Corruption (UNCAC) (2003) defines corruption in the private sector as including the promise, offering or giving, directly or indirectly, of an undue advantage, to any person who directs or works, in any capacity, for a private sector entity, for the person himself or herself or for another person. According to Keorapetse and Keokopa (2012) corruption therefore, involves illegal and inappropriate actions on the part of officials in public and private organisations, in which they inappropriately enrich themselves and / or their associates, or entice others to do so, by misusing the position in which they occupy.

Corruption has various types or categories that include petty corruption that is practiced by poorly paid public servants; grand corruption which involves theft of vast amounts of public and private resources; arbitrary corruption where individuals randomly seek for bribes; systematic corruption where perpetrators are organised in cartels or in systematic ways as individuals or groups to demand, extort or commit corrupt practices; political corruption symbolised by an environment that is lawless; and business or corporate corruption through which impunity and moral decadence prevail.

The World Bank (2017) has observed that businesses and individuals pay an estimated $1.5 trillion in bribes each year, which is about 2% of global GDP and 10 times the value of overseas development. Hence, according to the International Monetary Fund (2016), addressing corruption has become increasingly urgent. This sense of urgency arises in an environment where growth and employment prospects in many countries remain subdued and a number of many high profile corruption cases have fueled moral outrage. The urgency is global in nature since corruption affects both developed and developing countries.

Problem Statement

The role of records management in preventing and detecting corrupt practices in Uganda's financial institutions has been overlooked. Although international legislation for the management of records exists, the requirements for recordkeeping have not been fully adopted in the country's public and private institutions and this obstructs the fight against corruption.

The questions explored in this research were:

- What is the nature and extent of corruption in Uganda's financial institutions?
- Do the anti-corruption strategies in financial institutions advocate for records management?
- What is the role of records management in the fight against corruption?

Objectives

The objectives of the study include:

- To affirm the role of records management in the fight against corruption.
- To provide recommendations that will enhance the role of records management in the fight against corruption.

Methodology

This paper defines the nature and state of corruption in East Africa and Uganda's corporate sector. Focusing on financial institutions in Uganda, the paper describes different experiences in which proper records management has unearthed corrupt practices in the industry and how the lack of adequate information has influenced poor accountability. Further approaches in writing the paper include a review of literature that is relevant to the topic.

Corruption in East Africa

The 2016 Corruption Perception Index by Transparency International ranked Somalia as the most corrupt country in the world. At position 176, Somalia is followed by South Sudan 175, Burundi 159, Uganda 151, Kenya 145, Tanzania 116 and Rwanda at 50. The report noted that corruption hurts all countries. In the index's lower scoring countries, people frequently face situations of bribery and extortion, rely on basic services that have been undermined by the misappropriation of funds and confront official indifference when seeking redress from authorities that are corrupt. In higher scoring countries, the situation may seem less obvious in the daily lives of citizens, but closed door deals, illicit finance and patchy law enforcement exacerbate many forms of corruption.

Corruption is a cause for concern because it inhibits national development and prosperity. The 2014 annual report by East African Development Bank indicated that in Burundi, government delays with public financial management reforms were likely to curtail donor support thereby triggering a slowdown in economic growth. Mugerwa (2013) reported that freezes in aid by donor nations, the European Union and the World Bank following the embezzlement of more than UGX 50 billion in Uganda's Office of the Prime Minister were estimated to be worth \$300 million, equivalent to 93% of budget support to the country. Houreld (2017) reported that the United States government suspended \$21 million in direct aid to Kenya's Ministry of Health because of on-going concern about reports of corruption and weak accounting procedures.

Corporate Corruption in Uganda

According to the Inspectorate of Government's (IG) (2016) report to the Parliament of Uganda, a total of 1,050 corruption complaints were registered for the period July to December 2016, indicating a 12% increase from the complaints registered for the period January to June in the same year. The nature of the complaints included abuse of office 14.9%, embezzlement 8.2%, forgery and uttering of false documents 6.5%, misappropriation of public funds 6.3%, bribery 3.2%, causing financial loss, 1.1 %, and extortion 1.1 %. Altogether, corruption cases accounted for 67.6% of all the complaints investigated. The report also ranked private companies / organisations at position 8 out of 61 institutions that had been complained about in the same period. It is important to note that private companies were ranked at position 11 in 2014, position 10 in 2015 and subsequently at position 8 in 2016.

So what are the reasons behind the rise in corruption within private companies? According to Porter (2012), there are a few plausible explanations: from globalisation to rising income inequality, political and economic dynamics may have increased both the scope of corporate wrong doing and the incentives for business executives to bend or break the rules. Similarly, Datollo (2005) has observed that corporations all over the world wield an enormous amount of influence in the political sphere. In the U.S. campaign contributions from big business, designed to influence political agendas, are legendary. Corporations spend enormous amounts of money lobbying elected politicians; those who control the corporate coffers are all too eager to oblige the needy candidate as long as there is a chance the company will benefit from it.

Dennys (2013) reported that leaked e-mails exposed Heritage Oil Gas Limited's plot to dodge capital gains tax in Uganda after selling its exploration rights to Tullow Oil. Heritage's quality controller referred in court to an e-mail from Tullow's exploration director which appeared to insinuate that Tullow officials had considered bribing President Yoweri Museveni for oil exploration rights. The e-mail, documented in court manuscripts reads: "I wouldn't be surprised if M7 gets a fat wedge of election campaign money from some shadowy player for the rights to area 3A (oil exploration block)". This evidence suggests that multi-nationals that tolerate corruption are able to grow their business and get contracts in countries that tolerate corruption.

The Civil Society of Uganda (2017) released a press statement titled 'End Harmful Tax Holidays in Uganda'. It noted that a number of legal and policy frameworks in Uganda give discretionary powers to individuals to award tax exemptions. Section 77 (1-2) of the Public Finance Management Act 2015 accords a Minister to award tax exemptions and thereafter report and justify the award to parliament. According to documents tabled before the parliamentary budget committee in May 2017, the government of Uganda would in the financial year 2016/17 spend shillings 77 billion to pay taxes for BIDCO Oil Refineries Limited, Aya Investments Limited, Steel and Tube, Cipla Quality Chemicals and Uganda Electricity Transmission Limited, companies that have for so many years continued to drain the national treasury. The civil society also expressed its concern that access to information on tax holidays remained a preserve of technocrats and politicians.

The Nature and Extent of Corruption in Uganda's Financial Institutions

The business world, and in particular the banking industry, has been compared to a jungle of cut-throat, dog-eat-dog competition. Hence, some of the reasons that lead financial institutions, and the employees therein, to get involved in corruption include: 1) Strong pressure to perform and excel. 2) Weak internal controls. 3) Greed. The most prevalent forms of corruption in Uganda's financial institutions are:

1. Accounting fraud where officials deliberately forge records and documents regarding expenses, sales, revenue and other factors to falsely benefit a financial performance. A recent Bank of Uganda (BOU) investigation into the mismanagement of Crane Bank Limited (CBL) alleges that its proprietor Sudhir Ruparelia embezzled over UGX 400 billion through what they called highly sophisticated fraudulent transactions (Administrator, 2017). According to a report submitted by PricewaterhouseCoopers (2016) to BOU, false accounting at CBL was achieved by crediting income from off-book accrued interest receivable accounts and by keeping some liabilities off the books. A preliminary review of the books (records) indicated that the profits in 2009 were overstated by at least UGX 11 billion and those in 2012 by at least UGX 18 billion consequently overstating the retained earnings. The off-book liabilities were brought back into the books in 2013. Due to this entry, there was a difference of UGX 200 billion between the system and the actual balance in one of the Nostro Accounts as at 31st December 2013. As a way of concealing the variance, a total of UGX 188.3 billion was 'used' to pay for fraudulently invoiced fictitious construction expenses in January 2014. These effectively transferred the non-existent balance in the Nostro Account to apparent investments in property and equipment in 2014. The false accounting was carried out to give the impression that the financial institution was in good shape.

2. Embezzlement and / or the misappropriation of public or private funds and assets by trustees, directors and employees of the financial institutions. As indicated in the IG's annual report (2016), embezzlement is systematic and is implemented through syndicates or networks of strategically placed public and private officials who connive to steal funds and assets. This form of corruption thrives through procurement processes where deliberate delays in planning create a crisis and an excuse to circumvent the laid down policies and procedures. Uganda's National Social Security Fund (NSSF) is the largest single deposit of cash in the country and the evidence of transactions where the Fund's management has consistently pilfered workers' savings and left a legacy of procurement fraud is overwhelming. Examples of scandals include: 1) 1998, NSSF terminated its construction contract with Alcon International forcing the latter to sue for damages. Uganda's High Court awarded Alcon UGX 40 billion. 2) 2005, Uganda's Inspector General of Government reported that NSSF's Nsimbe Estates project was marred with corruption, including the improper lending of USD 5 million to the joint venture. 3) The Temangalo Land scandal came to light in July 2008 when reports emerged that NSSF bought 414 acres of land from ex-Prime Minister Amama Mbabazi at UGX 11 billion, a payment that was about 50% higher than the market price.

3. Bribery and abuse of office. Corrupt politicians need a system to help them move money around the world, a bank that allows them to hide their identity and handle their stolen money or bribe payments. Hence, many banks aid corrupt behavior. For example, Cairo International Bank admitted that between 2010 and 2012 its staff colluded with top employees of the Ministry of Public Service to steal UGX 88 billion. In passing his judgement in the case of Uganda Vs Lwamafa and Others, Justice Lawrence Gidudu (2016) stated that he had considered the submissions and reviewed the documents which formed the gist of the evidence relied on by both sides. He noted that the ministerial policy statement for FY 2010/11 at page 90 contains work plans and 44.12 billion is stated as gratuity for teachers, soldiers and local governments. Yet in the same document in the budget estimates at page 51 the 44.12 billion is recorded as social security contributions on code 212101. This was a contradiction because teachers, soldiers and other pensionable staff do not pay NSSF contributions. Furthermore, records submitted in court indicate that Cairo Bank opened accounts for recipients even before the said money was put in budget. The judge summarised in his ruling that the money was syphoned out in a well calculated syndicate initiated at the Ministry of Public Service, modified at the Ministry of Finance, perfected at the BOU and executed by Cairo Bank. Consequently, in November 2016, Uganda’s Anti-Corruption Court found the 3 Ministry employees guilty of all the 10 charges slapped against them.

Anti-corruption Strategies in Financial Institutions

Financial institutions all over the world are increasingly coming under scrutiny by regulators as the number of corruption cases and the severity of penalties continue to rise. Financial institutions have responded to this challenge by developing and adopting a number of strategies that generally include:

1. Legal and policy frameworks that define and prohibit corruption such as Uganda’s Anti-Money Laundering Act 2017 and the Financial Action Task Force (FATF) Recommendations 2012. The objectives of FATF are to set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system. To increase transparency of the financial system, the FATF Best Practices Paper (2013) requires countries to ensure that financial institutions keep and maintain all customer identification, transaction and account records, and business correspondence, so that they can be made available to the authorities on a timely basis. The records retained should be sufficient to allow the tracing of funds and disclosure of true ownership and movement of assets.

2. Internal control and compliance programmes that monitor and verify adherence by corporate officers to company policies and procedures, codes of conduct that

are generally applicable to the company and the laws and regulations mentioned above. For example, in addition to mandatory compliance trainings, the Standard Bank Group runs a FraudStop Programme for employees for the reporting of financial crimes, including fraud, theft, bribery and corruption by employees, clients, suppliers, stakeholders and third parties. The programme has been extremely instrumental in raising awareness and encouraging the reporting of fraud. It has also assisted in creating a culture of vigilant employees who go over and beyond their call of duty by being more and doing more to safeguard the assets of the organisation. Employees are rewarded a cash prize of ZAR750 for every reported case that is confirmed as fraud. A further ZAR50 000 is awarded to a lucky employee following the monthly FraudStop Draw. The grand prize is a reward of ZAR1 Million to one lucky winner at the annual FraudStop Million Rand Draw.

3. Internal and external audit programmes that detect illegal acts in the books and records of companies. A basic audit process reviews the effectiveness with which assets are controlled, income is accounted for and expenditure is recorded. BOU, through the Financial Institutions Act (2004) requires that every financial institution appoint an internal auditor suitably qualified and experienced in banking who shall report to the audit committee of the board of directors. Furthermore, every financial institution shall nominate for appointment annually, from a pre-qualified list published by the Central Bank, a firm of qualified external auditors whose duties shall be to perform an audit of the statements of the financial institutions and to give an opinion in accordance with the Act, the Company's Act and International Standards on Auditing as adopted in Uganda.

4. Sufficient financial reporting. Best practice in this area means adoption of International Financial Reporting Standards (IFRS) and International Accounting Standards (IAS). Both standards set out basic qualitative characteristics for financial reports such as faithful representation, relevance and materiality along with enhanced characteristics that reporting systems should strive to achieve – complete, neutral and free from error. Thus the use of false documents, off-the-book accounts, inaccurate recording of transactions, fictitious liabilities or expenditures are all in principle impermissible under IFRS.

It is clear from the strategies described above that records management is pivotal in the identification and eradication of corrupt practices in financial institutions. The FATF Best Practices Paper (2013) acknowledge that proper record keeping measures ensure that the authorities can use records to trace the proceeds of corruption, and as evidence to prosecute corruption and other crimes and recover criminal assets derived from such conduct.

The Role of Records Management in Combating Corruption

The idea that sound records management can make a significant contribution to the fight against corruption seems unimpressive. However, records and other sources of information ensure transparency, accountability and good governance which are key to resolving the problem of corruption. According to Shepherd and Yeo (2003) records typically contain information relating to the parties involved in an activity and to the contents or subject matter of the activity itself. They also contain information relating to other matters such as the political, organisational, and or social environment within which the activities occurred.

Good records management plays a role in combating corruption in the following ways:

1. Enhance transparency and accountability. Records provide information about the day-to-day governance and operations of an organisation. This knowledge opens up the organisation to independent external scrutiny and forms the basis for implementing regulation, policy, compliance and audit frameworks designed to detect and expose corrupt practices. Sserunjogi (2013) reported that on assuming office in May 2012, the new board of Uganda Development Bank did not find audited accounts five months after the end of the 2011 financial year. An investigation by Uganda's Auditor General (AG) revealed non-performing loans of about UGX 21 billion that the bank was unlikely to recover. The AG's report noted that some bank officials generated project proposals for potential borrowers, wrote replies to them on behalf of the bank and then deleted some computer files to destroy the evidence. Furthermore, some of the securities offered to the bank by the borrowers were not genuine and proper for the purposes of securing loans. The board reacted by terminating the bank's senior management staff.

2. Prevent corrupt tendencies or fraud. Proper scrutiny of records and documents enables officers in financial institutions to detect and intercept fraud types such as falsification of bank records, issuing and using counterfeit notes and unauthorised payments and withdrawals. Uganda's Anti-Corruption Coalition (2015) reported that Stanbic Bank Uganda burst a UGX 6 billion fraud involving a man who claimed to be a diplomat and an aide to a government minister. The fraudster opened an account at the bank's Nakivubo branch in Kampala and thereafter attempted to transfer the said funds from another internal account that he and his accomplices believed belonged to a Somali national that had been killed in the terror attack on the West Gate Mall in Nairobi in 2014 and thus the money was lying idle on his account. However, according to the bank's account opening records, the target account belongs to an Eritrean national who is still alive but had been flagged red as is the norm for all accounts that are dormant for more than 6 months.

3. Provide evidence of transactions and support decision making. Records contain information that can serve as evidence of breach of policies and procedures as well as the abuse of systems. Kasule (2017) reported that in delivering her judgement in the case of Equity Bank versus David Serwamba and others, Uganda's Anti-corruption Court Judge Margaret Tibulya ruled that there was sufficient evidence to prove that Serwamba together with 4 other Equity Bank employees embezzled UGX 4.6 billion. Relying on records submitted, including surveillance camera footage, the judge convicted Serwamba and 4 of his co-accused of money laundering and causing financial loss to the bank: " I find that prosecution has proved beyond suspicion that Serwamba embezzled the money from the bank as he is charged and I therefore convict him" she said.

4. Facilitate investigations by anti-corruption agencies. The success of anti-corruption institutions depends largely on access to complete and accurate information. Wesaka (2014) reported that Uganda's Anti-corruption Court ordered DFCU Bank to release a list of documents relating to the Global Fund trial that involved some of its former employees. The documents required included certified copies of detailed refund payment of UGX 455 million that was paid by DFCU to the Global Fund after closure of its accounts, internal and external audit reports and revenue statements for the period 2005 to 2007. The presiding judge, Lawrence Gidudu said that the trial was founded on the documents which were necessary to prove the case. The tough inquiry into DFCU's role in the Global Fund scandal resulted into the resignation of the bank's former Executive Director and Head of Treasury. The scandal also saw the sacking of Uganda's ex-Health Minister Jim Muhwezi and his 2 deputies for misuse of the million dollar fund.

While Uganda's IG's office has made progress in promoting good governance and combating corruption, it has indicated in its annual reports for 2014, 2015 and 2016 that the constraints that it faces include poor methods of records storage, retrieval and sharing; and that the lack of credible and actionable information creates bottlenecks for investigations. In the case of Uganda versus Nalumansi and others, three employees of Stanbic Bank, Kikuubo branch were acquitted on charges of causing financial loss of UGX 59.4 million to the bank. In their defence, the accused argued that the duty of care instructions / procedures given to them for withdrawals over the counter were for the Bank Master system yet at the time of the financial loss deployment of a new system called Finacle was on-going. The old system defaulted the branch name right away while the new system defaulted a code number. The trio 'assumed' that the code given was that of the domicile branch for the account in question and proceeded to effect the cash payment. In passing the ruling, Justice Paul Mugamba (2015) noted that the non-availability of evidence concerning the account opening documents affected the fortunes of the case because their availability would have shown what the accused looked at before completing the transaction. He also noted that the prosecution case would have been aided by production of a CCTV footage showing the identity of the customer that received the payment. Sadly, none could be produced.

Thurston (1996) noted that in Africa, from the early 1980's the World Bank, the International Monetary Fund and other donors began to press for increasingly wide range reforms in the management of public affairs. Efficiency, accountability and transparency were fundamental objectives of all such reforms. More than two decades later, Muhumuza (2017) reported that at the time of the FATF meeting in January 2017, Uganda was maintained on the list of countries with strategic deficiencies because it had at least 6 areas that had been raised as red flags. Among other concerns, FATF wanted the government of Uganda to ensure that banks and other financial institutions put in place proper book keeping requirements and amend the Anti Money Laundering Act to include a requirement for disclosures to be made when transactions of UGX 100 million and above are executed.

Recommendations

Uganda's fight against corruption should be extended to the private sector and in particular to financial institutions because they are a major channel of corruption proceeds in the country. The following proposals need to be considered:

1. Review of existing local legislation for financial institutions to include stringent record keeping measures that would prevent and detect corruption. This should be followed by the strict implementation and continuous monitoring of legislation and compliance programmes that demand financial institutions create and keep records to compare expectations against results. Mulcahy (2015) has stated that among the key anti-corruption tools to consider within the banking sector are: having strong anti-bribery rules, robust anti-money laundering rules, managing risks associated with politically exposed persons as banking clients and tools to counter banking secrecy. Article 31 of the UNCAC (2003) recommends that additional measures to hinder corruption would be empowering state courts or other competent authorities to order that bank, financial or commercial records be made available or seized.

2. Adopt international records management related standards such as ISO 15489. Financial institutions need to define and implement related standards in their records management programmes, including paper based and electronic record systems. According to Barata, Cain, and Thurston (1999) records must be managed according to standards with regard to record keeping practice as well as conforming to specific systems and document formats. Systems should be rules based in design and follow specific processes so that individuals cannot tamper

with the information that they manage. Standard systems and document formats for similar transactions enable effective identification of any disparities in records and draw attention to inconsistencies. Furthermore, records can be easily retrieved from standardized systems to support investigations.

3. Create awareness of existing legislation through sensitisation and training programmes within the financial institutions. It is important that records management professionals have a solid understanding of the nature of corruption within the country and the tools available to fight the vice so that they can develop and strengthen record keeping systems that will provide the evidence needed to detect corrupt practices as well as ensure accountability.

4. Continuous assessment of the susceptibility of record systems to corruption. Barata, Cain, and Thurston (1999) have argued that a records management system acts as a control system that reinforces other control systems such as internal and external audit. Hence, it is important that records management systems are continuously assessed for integrity so that they can effectively support other control functions. The advancement of technology should not be allowed to undermine the function of records management.

Conclusion

Generally, most of the anti-corruption strategies in Uganda have focused on the public sector and neglected the private sector yet tackling private sector corruption will go far in the goal of overcoming public corruption. The involvement of the corporate sector and especially financial institutions is critical in the fight against corruption in a highly liberalized and privatized economy like Uganda. International cooperation is also essential in fettering out and prosecuting corruption in this global economy. As highlighted by the UNCAC (2003) countries should assist one another in every aspect of the fight against corruption, including, prevention, investigation, and the prosecution of offenders. Particular emphasis should be focused on mutual legal assistance, in gathering and transferring evidence (records) for use in court.

References

Administrator. (2017, July 10). Sudhir embezzled over sh400b, says Bank of Uganda. *The New Vision*. Retrieved from: https://www.newvision.co.ug/new_vision/.../sudhir-embezzled-sh400b-bank-uganda [accessed 16 August 2017].

Anti-Corruption Coalition Uganda. 2015. Minister named in shs 6b bank fraud. Retrieved from: http://accu.or.ug/minister-named-in-shs6b-bank-fraud/ [accessed 30 October 2017].

Barata, K., Cain, P., & Thurston, A. (1999). From accounting to accountability: Managing accounting records as a strategic resource. Retrieved from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.453.6325&rep=rep1&type=pdf [accessed 31 August 2017].

Civil Society Uganda. 2017. End harmful tax holidays in Uganda. Retrieved from: http://www.seatiniuganda.org/publications/press-statements/149-civil-society-position-on-tax-holidays-in-uganda/file.html [accessed 24 August 2017].

Datollo, F. (2005). What's behind corporate corruption? *The Trumpet*. Retrieved from: https://www.thetrumpet.com/1410-whats-behind-corporate-corruption [accessed 28 August 2017].

Dennys, H. (2013, March 22). Tullow oil apologises to Ugandan government over bribery allegations. *The Telegraph*. Retrieved from: http://www.telegraph.co.uk/finance/newsbysector/energy/oilandgas/9949319/Tullow-Oil-apologises-to-Ugandan-government-over-bribery-allegations.html [accessed 28 August 2017].

East African Development Bank. (2014). Annual report and accounts. Retrieved from: http://eadb.org/publications/ [accessed 1 September 2017].

FATF / OECD. (2013) Best practices paper: The use of the FATF recommendations to combat corruption. Retrieved from: http://www.fatf-gafi.org/documents/guidance/ [accessed 25 September 2017].

Government of Uganda. (2004). *Financial institutions act*. Entebbe: UPPC.

High Court of Uganda: Anti-Corruption Division. (2015). Uganda versus Nalumansi Aisha and 2 others. (HCT-00-AC-SC 0001/2015). Retrieved from: https://ulii.org/ug/judgment/hc-anti-corruption-division/2015/19/ [accessed 22 November 2017].

High Court of Uganda: Anti-Corruption Division. (2015). Uganda versus Lwamafa Jimmy and 2 others. (HCT-00-CN-0024/2015). Retrieved from: https://ulii.org/ug/judgment/hc-anti-corruption-division/2016/4/ [accessed 22 November 2017].

Houreld, K. (2017, May 9). U.S. suspends aid to Kenyan health ministry over corruption concerns. Reuters. Retrieved from: https://af.reuters.com/article/topNews/idAFKBN1851SC-OZATP [accessed 30 November 2017].

Inspectorate of Government, The Republic of Uganda. (2016). Bi-annual inspectorate of government performance report to parliament. Retrieved from:

https://www.igg.go.ug/static/files/publications/IGG_Report_2016_July_to_December_Edited.pdf [accessed 15 September 2017].

Inspectorate of Government, The Republic of Uganda. (2015). Bi-annual inspectorate of government performance report to parliament. Retrieved from: https://www.igg.go.ug/static/files/publications/IG_Report_to_Parliament_July_-_Dec_2015.pdf [accessed 15 September 2017].

Inspectorate of Government, The Republic of Uganda. (2014). Bi-annual inspectorate of government performance report to parliament. Retrieved from: https://www.igg.go.ug/static/files/publications/IG_Report_to_Parliament_July_-_December_2014.pdf [accessed 15 September 2017].

International Financial Institutions Anti-Corruption Task Force. (2006). Uniform framework for preventing and combating fraud and corruption. Retrieved from: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/30716700-EN-UNIFORM-FRAMEWORK-FOR-COMBATTING-FRAUD-V6.PDF [accessed 7 August 2017].

International Monetary Fund. (2016). Corruption: Costs and mitigating strategies. Retrieved from: http://www.imf.org/external/pubs/ft/sdn/2016/sdn1605.pdf [accessed 6 September 2017].

Kasule, F. (2017, June 1). Ex Equity Bank manager convicted over sh4.6b theft. *The New Vision.* Retrieved from: https://www.newvision.co.ug/new.../-equity-bank-manager-convicted-sh46b-theft [accessed 16 August 2017].

Keorapetse, D. L., & Keakopa, S.M. (2012). Records management as a means to fight corruption and enhancing accountability in Botswana. *ESARBICA Journal.* 31 pp. 24-35. Retrieved from: https://www.ajol.info/index.php/esarjo/article/view/86883 [accessed 02 August 2017].

Mugerwa, Y. (2013, June 11). Leaked OPM report pins government officials. *Daily Monitor*. Retrieved from: http://www.monitor.co.ug/News/National/Leaked-OPM-report-pins-government-officials/688334-1878560-ny9ltwz/index.html [accessed 18 August 2017].

Muhumuza, M. K. (2017, March 17). Uganda strengthens anti-money laundering law to avoid blacklist. *Daily Monitor*, p. 43.

Mulcahy, S. (2015). Anti-corruption mechanisms in the banking sector. Retrieved from https://www.transparency.org/files/content/corruptionqas/Short_brief_on_Anti-corruption_mechanisms_in_the_banking_sector_2015.pdf [accessed 15 November 2017].

Porter, E. (2012). The spreading scourge of corporate corruption. *The New York Times*. Retrieved from: http://www.nytimes.com/2012/07/11/business/economy/the-spreading-scourge-of-corporate-corruption.html [accessed 28 August 2017].

Shepherd, E., & Yeo, G. (2003). *Managing records: A handbook of principles and practice*. London: Facet Publishing.

Sserunjogi, E. M. (2013, January 25). Audit reveals further rot in Uganda Development Bank. *Daily Monitor*. Retrieved from: http://www.monitor.co.ug/News/National/Audit-reveals-further-rot-in-Uganda-Development-Bank/688334-1657622-10bwp3p/index.html [accessed 11 September 2017].

PricewaterhouseCoopers Limited. (2017). Project Nyonyi: Report on the preliminary forensic review at Crane Bank. Retrieved from: http://eagle.co.ug/wp-content/uploads/2017/07/Project-Nyonyi-Forensic-audit-report-21-December-2016-1.pdf [accessed 30 August 2017].

Thurston, A. (1996). Records management in Africa: Old problems, dynamic new solutions. *Records Management Journal.* 6 (3) pp. 187-199.

Transparency International. What is corruption? Retrieved from: https://www.transparency.org/what-is-corruption [accessed 4 August 2017].

Transparency International. (2016). Corruption perception index. Retrieved from: https://www.transparency.org/news/feature/corruption_perceptions_index_2016 [accessed 4 August 2017].

Wesaka, A. (2014, June 26). Global fund: Court orders DFCU bank to release data. *Daily Monitor*. Retrieved from: http://mobile.monitor.co.ug/News/Global-Fund--Court-orders-Dfcu-bank-to-release-data/2466686-2361608-format-xhtml-b4dlr3/index.html [accessed 19 August 2017].

World Bank. (2017). Combating corruption. Retrieved from: http://www.worldbank.org/en/topic/governance/brief/anti-corruption [accessed 27 September 2017].

United Nations. (2003). United Nations convention against corruption. Retrieved from:

https://www.unodc.org/documents/brussels/UN_Convention_Against_Corruption.pdf [accessed 21 August 2017].

Bibliography

ADB / OECD. (2014). Corporate measures to prevent and detect corruption in Asia and the Pacific. Retrieved from: http://www.oecd.org/site/adboecdanti-corruptioninitiative/ADB-OECD-Corporate-Measures-to-Prevent-and-Detect-Corruption-ENG.pdf [accessed 31 August 2017].

European Investment Bank. (2013). Policy on preventing and deterring prohibited conduct in European Investment Bank activities. Retrieved from: http://www.eib.org/attachments/strategies/anti_fraud_policy_20130917_en.pdf [accessed 06 September 2017].

Shahin, W., & El-Achkar, E. (2017). *Banking and monitoring policies in a changing financial environment: A regulatory approach*. New York: Routledge.

Sturges, P. (2007). Corruption, transparency and a role for libraries. In: Belan-Simic, A., & Sapro-Ficovic, M. (eds.) *Library professional ethics and civil society ethical norms*. Zagreb: Croatian Library Association. pp. 182-192. Retrieved from: https://www.ifla.org/files/assets/faife/publications/sturges/corruption-libraries.pdf [accessed 20 August 2017].

World Bank. (2017). Helping countries combat corruption: The role of the World Bank. Retrieved from: http://www1.worldbank.org/publicsector/anticorrupt/corruptn/cor08.htm [accessed 27 September 2017].