ESARBICA JOURNAL

JOURNAL OF THE EASTERN

AND SOUTHERN AFRICA

REGIONAL BRANCH OF THE

INTERNATIONAL COUNCIL ON

ARCHIVES

Volume 39

2020

POLICY AND LEGAL FRAMEWORK FOR DIGITAL ARCHIVES CURATION: A PROPOSAL FOR BOTSWANA NATIONAL ARCHIVES AND RECORDS SERVICES

Nna Motlhasedi
Institute of Development Management, Botswana
caesarlepadile@gmail.com

Olefhile Mosweu
University of Johannesburg, South Africa
olfmos@gmail.com

Abstract

The purpose of this study was to explore the legislative and policy frameworks in support of digital archives curation, and the challenges inherent in digital archives curation in the context of Botswana public sector. The study used qualitative content analysis to resolve the research problem. The data collected was analysed thematically. The International Council on Archives (ICA) Principles on Access to Archives were used as a conceptual framework to guide the study. Digital curation is a function modern archivists cannot ignore nor shy away from. The study findings revealed that the legislative and policy framework for digital archives curation exists, but it is weak. In addition, the study revealed that there are constraints hindering access to archives including, among others, inadequate funding, inappropriate infrastructure, shortage of skilled personnel and time restrictions to enable wider access. Therefore, the researchers hope that insights from this study can shed light on the current state of affairs on digital archives curation and provide future directions for guiding digital archives curation at Botswana National Archives and Records Services.

Key words: Botswana, access, data curation, digital archives, records

Introduction and background to the study

Archival institutions acquire and preserve archives to make them accessible to the public. That is their core mandate for, without archives being accessible, they cease to be relevant in society. Archival material in their holdings, both digital and paper based, need to be well looked after to ensure they are available for consultation in the long term. Digital curation ensures that digital objects remain available and accessible to users for as long as they are needed.

Digital curation refers to the management and preservation of digital material to ensure accessibility over the long term (Abbot, 2008). Moreover, Brandt (2007:366) notes that "in the Information Age, curation can be defined as essential activities and systems that facilitate access, dissemination, and archiving of e-research. It includes protocols and tools that provide descriptive analyses of digital collections and objects to augment discovery, management, use, reuse, and preservation. Curation is about policies and consultation, as well

as tools and systems". In the context of this paper, the definition adopted is the one by University of Leicester (2019) which defines digital curation as the selection, preservation, maintenance, collection and archiving of digital assets. Digital archives in the care of an archival repository are in this context the digital assets referred to in the definition.

Therefore, the relationship between digital curation and digital preservation is somewhat homogeneous and sometimes inseparable since the two are very closely similar and are both looking at the provision of continued access to digital information resources. Yakel (2007:337) explains that "digital curation sets out to maintain digital information for current and future use and add value to a trusted body of digital information, by actively managing and appraising data over the life-cycle". Furthermore, Yakel (2007) notes and expands on the above view by lamenting that digital curation encompasses all of the actions needed to maintain digitised or born-digital objects and data over their entire life-cycle and over time for current and future generations of users. Inferred from the digital curation definition are the processes of digital archiving and digital preservation and also includes all processes needed for good data creation and management, and the capacity to add value to data to generate new sources of information and knowledge." Whereas, according to the International Records Management Trust (IRMT) (2009:2), "preservation of and access to electronic records involve understanding technological and management issues associated with digital preservation." The IRMT (2009) further indicates that in managing metadata, it is done by identifying provenance, confirming the authenticity of the object, describing the technical environment in which the digital object has been created, tracking preservation activities, identifying intellectual property and other rights related to the digital object. Uluocha (2014) points out that it is an essential component in resource management for the preservation of electronic information resources either born digital or migrated to digital platforms.

The nature of digital archives curation

At the end of a record's life cycle, non-current records are selected for long-term preservation and conservation since they are deemed to possess some everlasting value that validates their safekeeping in a storage facility for future referencing either as sources of history, societal memory and as information for academic research purposes. These non-current records are archived and due to the rapid growth in technological use several records are either born digital or migrated onto digital platforms. Therefore, digital archives are a commonality that calls for archivists and digital curators to manage appropriately. According to Venson, Ngoepe and Ngulube (2015:46), "National archives play an important role in the national development of a country. These may include the use of archives for historical accounting, archives and justice, democracy and good governance, archives and human rights, archives and settlement of disputes among countries such as territorial disputes."

Accordingly, Kalusopa and Zulu (2009) explain that digital preservation is the way of preserving information materials like digital surrogates created as a result of converting analogue materials to digital format and those which are born digital and were not in analogue format before. Whereas digital curation involves as delineated by Lee and Tibbo (2007), the management of digital objects over their entire lifecycle, ranging from pre-creation activities wherein systems are designed, and file formats and other data creation standards are established, through ongoing capture of evolving contextual information for digital assets housed in archival repositories.

2

Conceptual framework

The purpose of a conceptual framework is to define the research problem, establish theoretical coherence, organise the research design and implementation, and frame conceptual conclusions (Berman 2013). According to Maxwell (2013:39), a conceptual framework is a constructed "tentative theory of the phenomena" used by the researcher to explain phenomena investigated. The concepts provide a lens through which the issue under investigation can be examined. A conceptual framework is so central to research and according to Ngulube (2018), it is the glue that binds social research together such that without it, the whole research design crumbles. Miles and Huberman (1994) are of the view that a conceptual framework can be presented graphically or be in a narrative form showing the key variables or constructs to be studied and the presumed relationships between them.

The conceptual framework guiding this study is based on the International Council on Archives' Principles on Access to Archives (ICA 2012), which includes the following ten principles:
1. The public has the right of access to archives of public bodies. Both public and private entities should open their archives to the greatest extent possible.
2. Institutions holding archives make known the existence of the archives, including the existence of closed materials, and disclose the existence of restrictions that affect access to the archives.
3. Institutions holding archives adopt a pro-active approach to access.
4. Institutions holding archives ensure that restrictions on access are clear and of stated duration, are based on pertinent legislation, acknowledge the right of privacy and respect the rights of owners of private materials.
5. Archives are made available on equal and fair terms.
6. Institutions holding archives ensure that victims of serious crimes under international law have access to archives that provide evidence needed to assert their human rights and to document violations of them, even if those archives are closed to the general public.
7. Users have the right to appeal a denial of access.
8. Institutions holding archives ensure that operational constraints do not prevent access to archives.
9. Archivists have access to all closed archives and perform necessary archival work on them.
10. Archivists participate in the decision-making process on access (ICA 2012:8-11).

However, this study uses only three principles as the conceptual framework guiding the study and these are Principles 1, 3 and 8. These principles focus on the extent to which archives are made accessible to the public, the extent to which archival institutions have adopted proactive approaches that make archives accessible, and efforts to remove operational constraints to access to archives. The next section presents the research objectives that have been developed using the three aforementioned principles that serve as the constructs in the conceptual framework.

Statement of the problem

Many archival institutions in Africa are mandated to manage cultural heritage and coordinate records management (Keakopa 2019). In spite of such an important obligation and responsibility, many archival agencies still operate with old and outdated legislation. According to Ngoepe and Saurombe (2016), archival legislation in the SADC region lacks capacity to provide guidance on preservation and the provision of access to documentary heritage. This has the potential to lead to the negligence of digital archives or records. While

some countries like South Africa and Tanzania have amended their legislation to cater for electronic records management, many others are yet to amend their legislation to provide for this new role. In Botswana, archival legislation is neutral format wise, in terms of defining a record to cater for both manual and electronic records. However, guidance on digital archives curation is limited, making the National Archives and Records Services Act of Botswana inadequate in so far as digital archives curation is concerned. There are other pieces of legislation such as Electronic Communications and Transactions Act, and the Electronic Records (Evidence) Act, both of which recognise electronic records as admissible in law courts as they also carry the same evidential weight as their paper counterparts as long as their authenticity can be proven. This study analyses legislation that has relevance to digital archives curation and highlights constraints to digital archives curation and offers corrective solutions for BNARS.

Objectives of the study

In order to resolve the research problem, this study adopted the following objectives:
- To determine and analyse the legal and policy framework for digital archives curation in the public sector of Botswana.
- To find out operational constraints hindering access to archives.
- To recommend measures BNARS can undertake to improve the accessibility of digital archives to members of the public.

Methodology

This study used qualitative content analysis from the literature reviewed to address the research problem. "Documents of all types can help the researcher uncover meaning, develop understanding, and discover insights relevant to the research problem" (Bowen 2009:29). A literature search was conducted using several identified online sources using the Scopus database and Google Scholar. The following were the search terms and phrases that were used in the search "digital curation", "digital preservation", "digital archives" and "digital records" and "use." It is worth noting that, during the online searches, the researchers consulted literature from both the developed and developing world. The data collected was organised in line with research objectives and presented thematically.

Findings of the study

The findings of this study are presented in this section. They are in accordance with the research objectives.

The legal and policy framework for digital archives curation of Botswana

Records should be managed through guidance of a specific regulatory framework, the purpose of which is to provide an environment that is conducive for their proper management, including managing records in a digital environment (Bantin 2008:233; Okello-Obura 2011:6). The first objective of this study determined the legislative and policy frameworks in support of digital archives curation in the public sector of Botswana.

National Archives and Records Services Act

The Government of Botswana has a legislative framework that governs the management of archives in the public sector. The principal legislation in question is the National Archives and Records Services Act, which was enacted in 1978, and amended in 2007 (Government of Botswana 1978). The law established the Department of Botswana National Archives and

Records Services as a public body responsible for providing guidance for records management, and the custodian of public archives. This piece of legislation in:

- Section 5(2) designates the director of BNARS as the principal administrative officer in charge of the department and the custodian of public archives. In this context, public archives refer to public records that possess historical or enduring value, have been transferred to the national archives or place of deposit, including those acquired for purposes of this the National Archives and Records Services Act. Public archives also mean records in the custody of a government department.
- Section 5(4) mandates the director of BNARS to accept, store, preserve, describe and arrange all public archives transferred to it. It also mandates BNARS to advise government departments and ministries on the proper care, preservation, custody and control of public records.

The 2007 amendment extended the definition of a record to include digital records. The previous definition was crafted in such a way that it covered only paper or manual records. That is not surprising as it was enacted long ago in 1978, when digital records management was not a topical issue, at least in the context of Botswana. The amendment also legally gave BNARS the mandate to oversee the management of public sector records across their whole life cycle, including digital records produced in various e-government systems across government ministries and departments. An assessment of this legislation shows that much as it gives BNARS the mandate to manage both public records and archives, it is still weak to provide much guidance as the amendment was limited to the definition of a record. The International Council on Archives (1997:19) notes that "legislation governing many aspects of information creation, management, use and preservation has not kept pace with the rapid change in technology and archives legislation is no exception". It has been described as outdated, old and inconsistent. For the purpose of this study, it can be said the Act provides support for digital archives curation in principle, but it is incapable of doing so. Ngoepe and Keakopa (2011) state that archival legislation in Botswana was weak and incapable of supporting digital records and archives management. This is because with digital records, preservation starts at creation (Goh & Duranti 2012).

Electronic Records (Evidence) Act

The government of Botswana enacted the Electronic Records (Evidence) Act to accord digital records admissibility in courts of law as they contain evidential weight as their paper counter parts (Government of Botswana 2014a). For example, if it can be proved that the electronic record admitted as evidence in legal proceedings has been maintained in an electronic system which produced it without alteration of the content, then it can be certified by certifying authority following due process, that its contents can be trustworthy as evidence (Ngoepe & Saurombe 2016; Mosweu 2018). The Act also lays down measures for the authentication of electronic records (Mosweu & Ngoepe 2018). Motupu (2016) notes that, in some quarters, the Electronic Records (Evidence) Act has been used as a standard for the management of e-records in the context of e-government as specific standards are yet to be developed. The Electronic Records (Evidence) Act thus promotes the curation of digital records, although in the long term their accessibility is not guaranteed due to lack of appropriate infrastructure to ingest digital archives in Botswana (Ngoepe & Saurombe 2016).

Electronic Communications and Transactions Act

Another important piece of legislation which is amenable to digital archives curation is the Electronic Communications and Transactions Act (ECT) (Government of Botswana 2014b). It recognises electronic signatures and records emanating from e-mail communication making

them admissible in legal proceedings as long as there is compliance with the provisions of the Electronic Records (Evidence) Act. E-commerce transactions are regulated by the Act. This can enable organisations, particularly those in the public sector to benefit from cloud based information systems as compliance to the provisions of the ECT would accrue such benefits with assurance that the records generated are secure and reliable (Mosweu, Luthuli & Mosweu 2019). BNARS has the opportunity to develop procedures to enable it to benefit from the provisions of the ECT Act as the custodian of public records in Botswana regardless of form or media. In that instance, in the long term, BNARS can provide guidance for digital archives curation in the country.

National Information and Communication Technology (ICT) Policy

The desire to use ICTs to deliver public services in an effective and efficient way resulted in the development and implementation of the National ICT Policy, which came to be popularly known as Maitlamo Policy (Government of Botswana 2007). The word 'Maitlamo' in Setswana language means commitment, so through the policy, the government endeavoured to promote the use of ICTs as one of the reforms to drive the economy of Botswana. This followed a public outcry that public service delivery in Botswana was poor and did not serve the public for whom it was intended. Through the policy, the government aims to improve service delivery and to provide a national framework for the development of information technology initiatives in the country (Government of Botswana 2007; Mosweu 2012). It was anticipated that the policy would facilitate the establishment of Botswana as a globally competitive, knowledge and information society where lasting improvement in social, economic and cultural development is achieved through the effective use of ICTs (Government of Botswana, 2007). The policy is too broad to support digital archives curation in practice but in principle it has good intentions of providing a platform for government ministries and departments to use ICTs in public service delivery chains. By their nature, the use of ICTs generates digital records (Wamukoya & Mutula 2005). However, the policy does not have specific guidance on how the resultant digital records from transactions done through ICTs should be managed.

E-government strategy

The National ICT policy provided for the formulation of a national e-government strategy for Botswana. Through the national e-government strategy, the Government of Botswana seeks to use ICTs in public service delivery platforms to drive the transition of the country into a knowledge society, thus assuring economic diversification and sustainable economic development (Government of Botswana 2012). The digital revolution, occasioned by e-government initiatives, has led to increased digital communication as well as the quantity of digital records created and maintained in digital formats (Nengomasha 2009). Such records need to be managed properly when they become archives which would need to be accessible for use (Franks & Kunde 2006). The e-government strategy is similar to the Maitlamo policy in terms of ideals as it also does not offer much to guide digital curation of archives. However, it promoted the promulgation of other legislation which would promote the e-government agenda, and these were the Electronic Communications and Transactions Act, the Electronic Records (Evidence) Act and the Cybercrime and Computer Related Crimes Act (CCRCA) (Keetshabe 2015). According to Nengomasha (2009), it is upon governments to ensure that record-keeping requirements are taken care of when deploying respective e-government systems and programmes. Such record-keeping requirements ensure the creation, capturing, maintenance of reliability and authenticity, sharing and preservation of digital records. Proper digital records keeping systems manage digital records across their life cycle, including digital archives.

In a study in which Mosweu and Ngoepe (2018b) investigated the use of social media platforms for increased access and visibility by BNARS, it emerged that although there was a legislative framework in place, it was found lacking to regulate the use of social media as challenges such as privacy, security and data management remained issues. Similarly, but in reference to South Africa, Mukwevho (2017:191) in a study that interrogated the use of social media to enhance visibility and accessibility of public archives repositories in South Africa, found out that "almost all relevant departments have a social media platform that the public archives can use to competitively promote their archival holdings and services to the public. Of importance is that the public archives should start to use this easy to use technology to their own advantage." Notably, an earlier study by Kamatula, Saurombe and Mosweu (2013) had concluded that the popularity of social media platforms such as Facebook and Twitter made them prime tools to increase the visibility of documentary heritage housed in archival repositories of Botswana, South Africa and Tanzania.

Operational constraints hindering access to archives

Information Communication Technologies (ICTs) explosion globally has pushed for digital records to be voluminously created and received within organisations. Large collections of digital records have, therefore, prompted for comprehensive and good digital records management frameworks in organisations with the view to continuously provide access to information despite the constant technological redundancy that occurs. However, several hindrances have manifested themselves and proven challenging to easily curate digital archives. The third objective of the study established operational constraints hindering access to archives and these include financial and budgetary constraints, technological and infrastructural issues, inadequate infrastructure, lack of policies, skills and competency concerns.

Lack of policies on digital archives curation

According to Ogbebor (2011), most African countries do not have policies on handling information both in print or digital formats. Similarly, these sentiments are echoed by Mosweu, Luthuli and Mosweu (2019), Ngoepe and Keakopa (2011), and Ngoepe and Saurombe (2016) that archival legislation of several African countries is insufficient to control records in an automated environment. There are several barriers to the integration of ICTs in records management functions within many organisations in the developing countries amongst them, the absence of legislation, organisational policies and procedures in guiding on the management of both paper and electronic records (Kalusopa 2016).

Likewise, Kalusopa and Zulu (2009) in their study, discovered that there is generally weak policy formulation on digitisation; a lack of awareness about the potential of digital preservation by national heritage institutions; a dearth of human resources for digitisation and hence a lack of common standards on digital heritage materials preservation in Botswana. A survey which investigated the preparedness for digital curation and preservation in European archives and libraries reported on the findings that awareness of digital preservation, digital preservation policies, and digital preservation's inclusion in organisations' general planning, budgets for digital preservation and timescales for investment and results indicated that organisations that do not have a digital preservation policy were four times more likely to have no experience or be unaware of the challenges presented by digital preservation, three times more likely to have no plans for the long-term management of digital information, and more than twice as likely to put off investing in digital preservation technological solutions (Ndhlovu & Matingwina 2018).

Skills and competency issues

To effectively utilise and optimise the resources available for curation, the staff concerned should be equipped with the necessary expertise to run proceedings smoothly and with ease. Accordingly, Saurombe and Ngulube (2016) emphasise that skills and knowledge of archivists contribute greatly to their effectiveness.

However, there are generally concerns regarding skills and competencies of staff manning digitally inclined environments for digital records management and ultimately digital archives. Commonly lamented concerns are with regards to skills and competencies as highlighted in a study on digitising indigenous knowledge by Biyela, Oelude and Haumba (2016) that, generally, staff qualifications indicate that the majority of staff responsible for the digitisation units have post-basic degree qualifications like master's and doctorate degrees. However, it was not very clear whether they are skilled in digitising and managing digital resources. For instance, they found that in South Africa, it showed that some possessed necessary qualifications but were not trained or skilled in digitising knowledge. Thus, the study further alluded to a need for staff training in digital preservation so that they can be able to cascade the skill to the colleagues and community members as the need arises. According to Asogwa (2011), inadequate technical expertise is prevalent in many African countries, hence a record of shortage of personnel or human capital. He further points out that there are few archivists with computer science qualifications, who do not work in the archives, hence resulting in frequent break-down of ICT facilities and disruption of services in digitised archives. Moreover, Asogwa summarises that human resources with appropriate skills, competences and attitude are not readily available to initiate, implement and sustain the digital archiving project. Katuu and Ngoepe (2015) also concluded that poorly preserved digital records emanated the inadequacy in knowledge and skills of staff to manage digital archives.

Financial (budgetary) matters

Finances are essential to assist in the operation and existence of an archival body, even more in the era of technology where it is pricy to manage digital archives. In his study Asogwa (2011), discovered that digital projects are expensive; therefore, digital archiving requires enormous funding due to frequent hardware and software upgrades, and increasing cost of acquiring and maintaining digital content. Furthermore, Biyela et al. (2016) expound that the majority of respondents indicated that the surviving digitisation projects in the context of Africa are normally supported by international donors. The respondents went further to recommend that there is a need for more funding to increase the number of digitisation projects. The study continued to highlight that this funding is critical in order to promote preservation of knowledge in the context of its research with special focus on indigenous knowledge for rural communities. Biyela et al. (2016) further mention that it is essential to share knowledge globally for the development of informed and knowledge society in Africa. Thereby, financial constraints and limited resources is a hindrance that African countries grapples with and stands as an impediment to achieving digital curation. Saurombe (2016) notes that budgetary constraints negatively affected the capabilities of archival agencies in the ESARBICA region to promote access to archives. For example, her study revealed that a lack of transport, space and computers were highlighted as some of the challenges that were brought about by financial constraints. Onyancha (2016) demonstrates budgetary constraints for archival agencies by using the National Archives and Records Services of South Africa (NARSSA) as an example. He shows that NARSSA's expenditure was the third lowest among the sub-programmes, which included other agencies falling under the Department of Arts and Culture. Most of the budget allocated to the archives (and libraries) goes to servicing

operational salaries, leaving very little to go to other functions such as collection development, appraisal, or public programming.

Infrastructure for managing digital archives curation

According to International Records Management Trust (IRMT) (1999), digital archives programmes need to establish a coherent infrastructure for the management of digital records and archives. This infrastructure includes, but is not limited to, the provision of adequate resources, including staff, buildings, storage equipment's and funding. Moreover, Banach and Li (2011) suggest that in the digital age, preserving information has become a more complex task because digital information is fragile and faces many threats and technological obsolescence is one of them. Duranti (2001) elucidates that there are still noteworthy challenges facing the long-term preservation of digital information, which includes, rapid changes in technology that may lead to obsolescence of both hardware and software. Conversely, it is imperative to have the relevant infrastructure in the form of frameworks that guide in the sound digital curation of archives by organisations is imperative, as it delineates parameters to work within, to effectively undertake curation. Africa's infrastructure is still largely inadequate for digital archiving. Ngoepe and Keakopa (2011) note that the national archives of Botswana and South Africa had inadequate infrastructure to ingest digital archives in their archival repositories.

Time restrictions due to archives opening hours

When digital archives curation is done properly, it promotes access to archives as found in the ICA Principles on Access to Archives (ICA 2012). Ngoepe and Keakopa (2011), citing Akotia (2003), mention that archival institutions are not only tasked with ensuring proper management of public records, promoting their preservation but also ensuring accessibility to archival heritage. Archives' operating times can be used to promote access to archives and so play an enabling role in promoting the use of archives, according to Hlope and Wamukoya (2007), low usage of archival materials correlates with inadequate opening hours. Furthermore, Ngulube, Sibanda and Makoni (2013) in their study of the Bulawayo Archives reiterated that operating hours were a systematic barrier on access to archives as the traditional Monday to Friday working week physically impeded access. They further contend that this approach excluded many working class people from accessing archives, even though there is a provision for the reading room to be in operation and open during the lunch hour. BNARS is comparatively doing better as it opens its archival reference services during the weekend for three hours from 9 am to 12 pm solely to promote the use of archives, which were reported to have gone down as seen by the number of visitors to the reading room which dropped between 1998 and 2001 (Murambiwa & Ngulube 2011).

Conclusion

Supporting continued access to digital archival materials requires all concerned stakeholders to pull their weight and find relevant and appropriate means of digitally preserving and curating of archives. However, in conclusion, the literature reveals that in Botswana, the archival legislative and policy frameworks are exposed as weak and incapable of supporting digital records and archives management which, in turn, could enable and support digital curation (Ngoepe & Keakopa 2011). For instance, the Maitlamo policy, which is a national policy guiding and informing on ICT-related matters, does not have specific guidance on how digital records from transactions done through ICTs should be managed, including their preservation or curation. Conversely, the country is on the right track since it has developed a law that supports and promotes an e-government agenda which could subsequently enhance and promote access to digital archives through an open access initiative. Mosweu (2011),

although she was looking at the oral history at the archives, also highlights the importance of digitisation as another way to ensure access to the collections. Several constraints were identified as being in the forefront of hindering digital archives preservations and curation and financial constraints were identified as being one of them as well as unavailability of sound infrastructure.

Recommendations

In view of the findings unearthed by this study, the following recommendations are made based on the following:

- The country needs to develop strong archival legislation and policy frameworks that supports digital records and archives management, specifically to guide digital archives curation.
- It is recommended that BNARS should adopt international standards on digital archives preservation. The department can benchmark from other African countries, such as South Africa, which have a fairly developed standards and policy frameworks which guide digital records management.
- It is recommended that BNARS should look at alternative means of generating funds for self-sustenance and ensure that more funding is not only sourced from the government to support its initiatives, but also from other international archives bodies and independent donor organisations.
- It is recommended that BNARS, the Department of Information Technology and ICT vendors and experts should collaborate to come up with solutions for the curation of digital archives.

It is worth noting that alone, the department may experience challenges in the attempt to implement the suggested recommendations for purposes of improving digital archives curation. It is through partnerships and collaboration with other government and non-governmental bodies, both local and international, that these recommendations can be operationalised for the benefit society through access to archives, including those in digital form.

References

Abbott, D. 2008. What is digital curation? Available at: http://www.dcc.ac.uk/resources/briefingpapers/introduction-curation/what-digital-curation (Accessed 10 March 2019).

Anderson, S. n.d. *Past indiscretions: digital archives and recombinant history*. Available at: http://www.rimusnoc.com/download/pdf/digital%20cinema/Anderson_article1.pdf (Accessed 10 March 2019).

Asogwa, B.E. 2011. Digitisation of archival collections in Africa for scholarly communication: issues, strategies, and challenges. *Library Philosophy and Practice* 1-14. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1725&context=libphilprac (Accessed 22 July 2019).

Banach, M. & Li, Y. (2011) Institutional repositories and digital preservation: Assessing current practices at research libraries. *D-Lib Magazine* 17(5): 1-13.

Bantin, P. C. 2008. *Understanding data and information systems for recordkeeping*. London, New York: Neal-Schuman Publishers.

Beagrie, N. (2008) Digital curation for science, digital libraries, and individuals. *International Journal of Digital Curation,* 1(1): 3-16.

Berman, J. 2013. Utility of a conceptual framework within doctoral study: a researcher's reflections. *Issues in Educational Research* 23(1):1-18.

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. Available at: https://www.researchgate.net/publication/302430818_Digital_preservation_of_Indigenous_Knowledge_IK_by_Cultural_Heritage_Institutions_A_comparative_study_of_Nigeria_South_Africa_and_Uganda (Accessed 28 June 2019).

Bowen, Glenn. 2009 *Document analysis as a qualitative research method*. West Carolina: Western Carolina University.

Brandt, D.S. 2007 Librarians as partners in e-research Purdue University Libraries promote collaboration, *College & Research Libraries News* 68(6): 365-396.

Creswell, J. W. 2014. *Research design: qualitative, quantitative, and mixed methods approaches*. Los Angeles: Sage Publications.

Duranti, L. 2001. *The long-term preservation of authentic electronic records*, in Apers, P.M.G., Atzeni, P., Ceri, S., Stefano Paraboschi, Ramamohanarao, K. & Snodgrass, R.T. (eds), *Proceedings of 27th International Conference on Very Large Data Bases*, Roma, Italy, Morgan Kaufmann, 625-628.

Franks, P & Kunde, N. 2006. *Why metadata matters*. Available at: https://www.researchgate.net/profile/Patricia_Franks/publication/263844818_Why_Metadata_Matters/links/5bd36cb3a6fdcc3a8da91dc8/Why-Metadata-Matters.pdf?origin=publication_detail (Accessed 1 July 2016).

Goh, E. & Duranti, L. 2012 Archival legislation for engendering trust in an increasingly networked digital environment. Available at: http://ica2012.ica.org/files/pdf/Full%20papers%20upload/ica12Final00287.pdf (Accessed 20 April 2019).

Hlophe, P. & Wamukoya, J. 2007. Utilisation of archival information at Swaziland National Archives by researchers at University of Swaziland. *ESARBICA Journal* 26: 65-85.

International Council on Archives. 1997. Guide for managing electronic records from an archival perspective. Available at: https://www.ica.org/sites/default/files/ICA%20Study%208%20guide_eng.pdf (Accessed 7 May 2019).

International Council on Archives. 2012. Committee on best practices and standards working group on access. Available at: https://www.ica.org/sites/default/files/ICA_Access-principles_EN.pdf (Accessed 19 June 2019).

International Records Management Trust (IRMT). 2009. *Preserving electronic records training in electronic records management module 4*. London: Department for International Development.

International Records Management Trust. 1999. The management of public sector records: principles and context. Available at: https://www.irmt.org/documents/educ_training/public_sector_rec/IRMT_principles.pdf (Accessed 17 April 2019).

Kalusopa, T. 2016. Extent of the integration of information communication and technology (ICT) systems in the management of records in labour organisations in Botswana. *Journal of the South African Society of Archivists* 49: 102-115.

Kalusopa, T. & Zulu, S. 2009. *Digital heritage material preservation in Botswana: problems and prospects*. *Collection building* 28: 98-107.

Kamatula, G. A., Mnkeni-Saurombe., N. and Mosweu, O. 2013. The role of archives in the promotion of documentary national heritage in Tanzania, South Africa and Botswana. *ESARBICA Journal* 32: 109-127.

Katuu, S. & Ngoepe, M. 2015. *Managing digital heritage an analysis of the education and training curriculum for Africa's archives and records professionals*. *Digital Heritage* 191-194.

Keakopa, S.M. 2019. Management of public sector records and archives in Botswana. In Ngulube, P. 2019 (ed.), *Handbook of research on advocacy, promotion, and public programming,* 235-256. Hershey, PA: IGI Global.

Keakopa, S.M. 2018. Management of financial records in selected public institutions in Botswana. *Journal of the South African Society of Archivists* 51: 1-33.

Keetshabe, A. 2015. *Developing cyber legislation in Botswana: an update*. Available at: http://www.cit.co.bw/downloads/elegislation%20in%20botswana%20-%20keetshabe .pdf (Accessed 6 June 2019).

Khayundi, F. 2011. Existing records and archival programmes to the job market. *Journal of the South African Society of Archivists* 44: 62-73.

Lee, C.A. & Tibbo, H.R. 2007. Digital curation and trusted repositories: steps toward success. *Journal of Digital Information* 8(2). Available at: https://journals.tdl.org/jodi/index.php/jodi/article/view/229/183 (Accessed 3 July 2019)

Maxwell, J.A. 2013. *Qualitative research design: an interactive approach*. London: Sage Publications.

Mnjama, N. 2010. Preservation and management of audio-visual archives in Botswana. *African Journal of Library Archives & Information Science* 20(2): 139-148.

Mosweu, T., Luthuli, L. & Mosweu, O. 2019. Implications of cloud-computing services in records management in Africa: Achilles heels of the digital era? *South African Journal of Information Management* 21(1): 1-12.

Mosweu, T. & Simon, I. 2018. The implications of the National Archives and Records Services Act on archival practice in Botswana. *Journal of the South African Society of Archivists* 51: 70-96.

Mosweu, T. 2011. Digitising the oral history collection at Botswana National Archives and Records Services: problems and prospects. *Journal of the South African Society of Archivists* 44: 124-130.

Mosweu, O. & Ngoepe, M. 2018. Legal framework for auditing public sector accounting records in the digital environment in Botswana. In Ngoepe, M. & Fombad, M. *Proceedings of the 9th ProLISSA Conference*. Cambridge Scholars Publishing: Newcastle.

Mosweu, T. & Simon. 2018. Use of social media platforms for increased access and visibility by the Botswana National Archives and Records Services. In Ngulube, P. (ed.), *Handbook of Research on Advocacy, Promotion, and Public Programming for Memory Institutions*. Hershey, PA: IGI Global.

Motupu, K. 2016. Assimilation of e-government systems at the Ministry of Trade and Industry in Botswana. MA thesis, University of Botswana, Gaborone.

Mukwevho, J. 2017. Enhancing visibility and accessibility of public archives repositories in South Africa. Available at: http://uir.unisa.ac.za/bitstream/handle/10500/23820/dissertation_mukwevho_mj.pdf?s equence=1&isAllowed=y (Accessed 25 July 2019).

Ndhlovu, P. & Matingwina, T. 2018. The state of preparedness for digital curation and preservation: a case study of a developing country academic library. *IASSIST Quarterly* 42: 1-22.

Nengomasha, C.T. 2009. A study of electronic records management in the Namibian public service in the context of e-government. PhD Thesis, University of Namibia, Windhoek.

Ngoepe, M. & Saurombe. 2016. Provisions for managing and preserving records crated in networked environments in the archival legislative frameworks of selected member states in SADC. *Archives and Manuscripts* 44(1): 24-41.

Ngoepe, M. 2015. When rain clouds gather – Entrustment of government records to the cloud in South Africa. Paper presented at the XXIII ESARBICA biennial conference, Victoria Falls, Zimbabwe, 10–12 June 2015.

Ngoepe, M. & Keakopa, M.S. 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: 145-160.

Ngulube, P. 2018. Overcoming the difficulties associated with using conceptual and theoretical frameworks in Heritage Studies. Available at: https://www.researchgate.net/publication/320471290_Overcoming_the_Difficulties_Associated_with_Using_Conceptual_and_Theoretical_Frameworks_in_Heritage_Studies (Accessed 28 May 2019).

Ngulube, P., Ngoepe, M., Saurombe, N. & Chaterera, F. 2017. Towards a uniform strategy for taking archives to the people in South Africa. *ESARBICA Journal* 36: 74-93.

Ngulube, P., Sibanda, P. & Makoni, S. 2013. Mapping access and use of archival materials held at the Bulawayo Archives in Zimbabwe. *ESARBICA Journal* 32*:* 123-137.

Murambiwa, E.M. & Ngulube, P. 2011. Measuring access to public archives and developing an access index: experiences of the national archives of Zimbabwe. *ESARBICA Journal* 30: 83-101.

Okello-Obura, C. 2012. Records and information management as a conduit to effective auditing. *ESARBICA Journal* 31: 36-47.

Odhiambo, B.O. 2018. Institutional readiness for digital archives management at United States International University-Africa. *Archives and Manuscripts* 46: 330-353.

Ogbebor, O. 2011. Challenges of digital preservation in Africa. Available at: http://osarome.blogspot.com/2011/12/challenges-of-digital-preservationin.html#!/2011/12 (Accessed 17 April 2019).

Onyancha, O.B. 2016. Public programming in the archival literature: revelations from a content analysis of the subject matter. *ESARBICA Journal* 35: 47-66.

Saurombe, N. 2020. Taking archives to the people: an examination of public programs in the National Archives of the Eastern and Southern Africa Regional Branch of the International Council on Archives. *Archives & Manuscripts* 48(1): 25-44.

Saurombe, N. 2016. Public programming of public archives in the East and Southern Africa Regional Branch of the International Council on Archives (ESARBICA): towards an inclusive and integrated framework. Available at: http://uir.unisa.ac.za/handle/10500/20084 (Accessed 25 July 2019).

Saurombe, N. & Ngulube, P. 2016. Public programming skills of archivists in selected national memory institutions of East and Southern Africa. *Mousaion* 34(1): 23-42.

Ritchie, D.A. 2003. *Doing oral history: a practical guide*. New York: Oxford University Press.

Ritchie, J. & Lewis, D. 2003. *Qualitative research practice: A guide for social science students and researchers*. London. Open University.

Schrimpf, S. 2009. Lessons learned: moving a digital preservation network from project organisation to sustainability. Available at: https://escholarship.org/content/qt2f77s5bk/qt2f77s5bk.pdf (Accessed 10 March 2019).

Travis, D. 2019. Desk research: they what, why and how. Available at: https://www.userfocus.co.uk/articles/desk-research-the-what-why-and-how.html (Accessed 30 June 2019).

Uluocha, A. 2014. Imperatives for storage and preservation of legal information resources in a digital era. *Information and Knowledge Management* 4(5): 52-57.

Venson, S.L., Ngoepe, M. & Ngulube, P. 2014. The role of public archives in national development in selected countries in the East and Southern Africa Regional Branch of

the International Council on Archives region. *Innovation: journal of appropriate librarianship and information work in Southern Africa* 2014: 46-68.

Wamukoya, J. & Mutula, SM. 2005. E-records management and governance in East and Southern Africa. *Malaysian Journal of Library & Information Science* 10(2): 67-83.

Williams, C. 2006. *Managing archives: Foundations, principles and practice*. Oxford: Chandos Publishing.

Yakel, E. 2007. Digital curation. *OCLC Systems & Services: International Digital Library Perspective*s 23(4): 335-340.