Institutional Repositories Containing Digitized Heritage Material (Special Collections) are Making 'Lost or Hidden' Cultures Accessible: Advantages and Disadvantages of this Trend

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Abstract: The current information and electronic publishing age has tremendously increased the demand for academic institutions and libraries to recognise the importance of Institutional Repositories. They are essential infrastructures in modern scholarship. However, the main focus in this study is the digital preservation of cultural heritage or special collection, providing access to knowledge about lost or hidden cultures. The purpose of this study was to examine the importance of the digitized heritage material, in the institutional repositories, in making accessible lost or hidden cultures. The research type was a theoretical research type, focusing on published research literature about the problem. Search terms were generated to get relevant literature about the topic from databases like; Emerald Publishing, Google Scholar, Google search, Booksc.org, portal.unesco.org, eprints.rclis.org, and SPARC. It was reported that all countries under study did not have policies to guide digital preservation of cultural heritage. Only Uganda was reported to have a project WDL (Uganda) under the National Library of Uganda, working on digital preservation of cultural heritage. Makerere University was reported to be the only institution to have a digital preservation of special collection (music archive). Access to the digital collection of the cultural heritage is very vital in many aspects of research and societal dynamics. Governments should pick interest in digital preservation of heritage material and making it easily accessible. Preservation policies should be put in place to guide the preservation processes. Academic and research institutional libraries should take a leading role in digital preservation processes on the national cultural heritage.

I. INTRODUCTION

Many institutions in Ghana, Nigeria, Uganda and Tanzania have instituted Institutional Repositories to archive research, dissertations and theses, and other institutional information resources. Other institutions have gone a step ahead to archive other resources of national, cultural, political, social and economic value. This kind of collection attracts researchers and scholars who may want to access to utilize the information for different purposes.

The current information and electronic publishing age has tremendously increased the demand for academic institutions and libraries to recognise the importance of institutional repositories. It can be said to be a digital research archive which comprises scholarly works which can be easily accessed, that represents the intellectual content of an academic institution or organization. It is a means for institutions to manage the digital scholarship of what their communities produce, it also increases accessibility and easy retrieval of research works both before and after publication, and also increases the visibility and academic prestige of both the institutions and authors.

Lynch (2003) regards institutional repositories as essential infrastructure for modern scholarship. He argues that "the development of institutional repositories emerged as a new strategy that allows universities to apply serious, systematic leverage to accelerate changes taking place in scholarship and scholarly communication". A remark also made by Markey et al. (2007) as "a considerable portion of the scholarly record

is born digital, and some scholarship is produced in digital formats that have no physical, in-the-hand counterparts".

The strength and weakness of DSpace in any organization is very much depended upon how effective and efficient their institutional repository is managing their electronic and printed resources. Resources that are mostly manage by this institution or organization in their institutional repositories are mostly their organize theses, theses CD, publications, journal articles, research works, project work.

II. DEFINITION OF KEY TERMS
This section includes the definition of the key concepts as implied in this study. The concepts define the boundaries which this researchers covers and the relationships between them.

2.1 Institutional Repositories
Lynch (2003) defines an Institutional Repository 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. It is most essentially an organizational commitment to the stewardship of these digital materials, including long-term preservation where appropriate, as well as organization and access or distribution". Chan (2004) on the other hand defines an Information Repository as a Web-based archive of scholarly material produced by the members of a defined institution. According to Johnson (2002) IR is "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".

2.2 Digitized Heritage Materials
Kaddu (2015) defines Cultural Heritage as an expression of the ways of living developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expressions and values. Therefore, digital heritage "consists of unique resources of human knowledge and expression. It embraces cultural, educational, scientific and administrative resources, as well as technical, legal, medical and other kinds of information created digitally or converted into digital form from existing analog resources"[6].

2.3 Special Collections
A collection of materials segregated from a general library collection according to form, subject, age, condition, rarity, source, or value[7]. Dooley et al. (2010) define special collections as "library and archival materials in any format (e.g., rare books, manuscripts, photographs, institutional archives) that are generally characterized by their artefactual or monetary value, physical format, uniqueness or rarity, and/or an institutional commitment to long-term preservation and access. They generally are housed in a separate unit with specialized security and user services. Circulation of materials usually is restricted".

2.4 Lost and Hidden Cultures
Culture is broadly defined by Zimmermann (2015) as "characteristics and knowledge of a particular group of people, defined by everything from language, religion, cuisine, social habits, music and arts". "Lost" is something that you once had but you no longer have, while "Hidden" is something that you had and is no longer seen or you can no longer access it.

III. RESEARCH PROBLEM
The value of artefacts which have rich cultural and historical values cannot be overstated. This is true because of the lessons and knowledge it captures about our past and the portrayal of the changes we have undergone as people. Cultures of the past help to give an insight into today's society. There is a saying that "you have to know the past to understand the present"[10]. The past gives a picture of what we have gone through as people, the administrative system, trade and commerce.

However, due to the incidences and recurrences of wars, armed conflicts, terrorism and insurgencies, many of the societal, cultural heritages are destroyed and stolen by opportunists who use the excuse of instability to rid the societies of their cultural identities. When these valuables are lost or destroyed, the proceeding generations never get an opportunity to see and reflect on their ancestral past. Furthermore, most societal developments today base on the past experiences, indigenous knowledge and skills, for example, such developments are observed in the current promotion of herbal medicine in most countries, which is largely supposed by cultural heritage, of especially the hidden or extinct cultures.

Therefore, it is very necessary to study the trends and progress of digital preservation of the cultural heritage of countries in Africa which include; Uganda, Nigeria, Ghana and Tanzania, the challenges encountered

and the opportunities or advantages it avails, to be able to secure easy access to all, through an electronic platform.

IV. RESEARCH OBJECTIVE

The main objective of this study was to examine the importance of the digitized heritage material, in the institutional repositories, in making accessible lost or hidden cultures. The study focuses on the following specific objectives.

(1) To establish the advantages of the institutional repositories in making accessible lost or hidden cultural heritage.

(2) To establish the disadvantages of the institutional repositories in making accessible lost or hidden cultural heritage.

V. LITERATURE REVIEW

This section includes a review of the information related to digital preservation of cultural heritage, globally and locally in Nigeria, Ghana, Uganda and Tanzania. It includes the benefits, processes and challenges in the digital preservation of the heritage material.

Heritage preservation is a task not only for the Heritage team but for a collection of different skills, efforts and collaborations. This may include, among others, the cataloguers, the policy makers, Information Technologists, politicians, curators, finance, customers and subject specialists[11]. A study about hidden treasures of institutional repositories narrates that "while the main purposes of institutional repositories are to bring together and preserve the intellectual output of a laboratory, department, university, or other entity, the incentives and commitments to change the process of scholarly communication have also begun serving as strong motivators"[12].

5.1 Advantages and Disadvantages of institutional repositories in making lost or hidden cultures accessible

This section shows the results of this study by highlighting the importance of the institutional repositories through making accessible the digitised special collection containing information about lost or hidden cultures. The results include the advantages and disadvantages of the institutional repositories in relation to the use of information about hidden cultures, indigenous knowledge, or traditions.

Advantages

Most people who access the heritage content about their cultures develop a greater understanding and appreciation of their own culture and heritage[13]. This, therefore, generates a feeling of attachment to their ancestral origin.

Digitization of special collection by the Institutional repository has created has helped most institutions to increase on their collection development, to be able to serve users with a wide diversity of information needs[14].

Many current research activities are based on hidden cultural practices. In ethnobotanical research, emphasis is put on people's knowledge of traditional medicines and plants of a medical value. Digitization of such information is of high value to the current and future generation. Some of the medical conditions and aspects of social welfare can exclusively be managed through the use of cultural skills, which are, currently, seemingly, fading away. According to Muntu (2010) social conditions such as removal of misfortune, removal of bad luck, getting your dream job, promotion at work, among others can be realized. However, a study conducted by Degonda (2003) in Uganda revealed the medical, social and spiritual well-being can best be realized when patients have confidence in their healers, and concluded that spiritual healing by traditional healers is very vital in Psychotherapy.

Disadvantages

Digitized heritage materials are presented in different digital formats which include; electronic journals and books, digital music, images, videos and websites. These formats present technical difficulties to most users who would benefit from accessing the resources[17].

Archiving of heritage material in Uganda has faced many challenges and has not largely kicked off as expected. Scarcity of funding sources, digitization tools and the lack of enough skilled personnel are some of the major challenges facing the digitization of cultural heritage like music[18]. Therefore, it is hard for most people to access such desired information in a timely manner.

Documentation of traditional knowledge and skills for digitization may suffer loss of meaning and value. Some materials may not portray the exact picture of its original copy. In some others the meaning may be lost due to differences in perceptions and language between the person documenting and the person who possesses the knowledge[19].

One of the dilemmas of preservation is that the best conditions for storing an object often compromise the object's effectiveness for research. Still images, whether film or paper based, are often an integral part of a mixed-media collection. Such images might include photos in a personal archive, illustrations in a book, or architectural records in a business archive. Preservation would demand that they be physically separated from the original collection and stored elsewhere in cold vaults. Each medium has its own storage requirements; for example, requirements for black-and-white film differ from those for color[20].

In the report of the task force on the Artefact in Library Collections, Nichols et al. (2001) note that there are large collections of documentary photography that gain research value as they are supplemented by a range of secondary materials; notebooks, work files, and contact sheets, that enlarge the evidential base of the documents under review. In many cases, it is sufficient to create surrogates that can be kept with the original collection. Copy photos or digital reproductions usually provide all the information needed, but creating high-quality surrogates can be costly. This means there is dis advantage to preserving the digitized collection with cultural heritage since it is costly in transforming it to from its original source of preservation to current source so as it can be accessible to the community in hand. Here there is cost in time to transfer the heritage, cost in money to acquire related sources that can help the transformation of the cultural heritage to today's environment.

VI. METHODOLOGY

This research study was a Theoretical Research type, mainly focusing on published literature about the research problem under study. To obtain relevant search results, strategic searching approaches were used, including the Boolean operators, phrase searching, proximity searching, and truncations (*). While developing a search strategy, the researchers used mind maps to generate the appropriate key terms to be used while conducting the searches.

The key word searches developed from the topic included; 1. Institutional Repository 2. Digitized Heritage Material 3. Special Collection 4. Lost Cultures 5. Hidden Cultures 6. Advantages 7. Disadvantages 8. Ghana 9. Tanzania 10. Uganda 11. Nigeria. Key words were developed as shown in table 1.

Table 1. Keywords / Search terms						
	Institutional Repositor*	Digitized Heritage Material	Special Collection	Lost Cultures	Hidden Cultures	Advantages and Disadvantages	Ghana, Tanzania, Uganda, Nigeria
1.	Open Access Repositor*	Traditional Materials	Rare Collection	Extinct Cultures	Marginalized People	Benefits	
2.				Indigenous Knowledge	Endangered Cultures	Merit*	
3.						Weaknesses	
4.						Drawbacks	
5.						Pros and Cons	

Searchers were formulated using a combination of the different key words (search terms) to obtain the search results from the databases. The search terms were interchangeably used with relevant Boolean operators to formulate search queries, as shown by the example in figure 1 below.
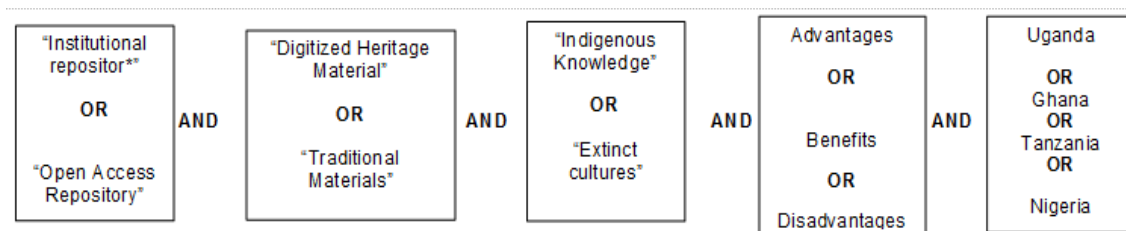

Figure 1: A schematic layout of the search strategy

The order and combination of the search terms may be varied in order to widen the search results. The relation of the search terms in developing and search query is as shown in figure 2 below, in connection to the search results.
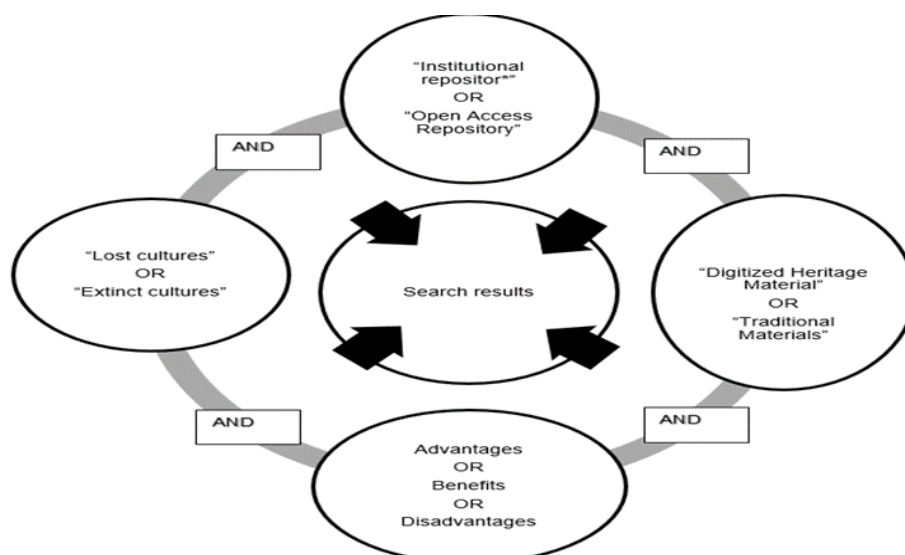
Figure 2: The relations between the search terms, linking to search results

The search queries were conducted in a number of databases including; Emerald Publishing, Google Scholar, Google search, Booksc.org, portal.unesco.org, eprints.rclis.org, and SPARC.

VII.   CULTURAL HERITAGE PRESERVATION

The world's universities, museums, governments, and other organizations house treasures that have been hidden in archives, basements, attics, print formats, and a variety of storage devices[12]. These treasures encompass scientific, technological, cultural, artistic, and historical materials generally unavailable to searchers and the public. Institutional repositories are now being created to manage, preserve, and maintain the digital assets, intellectual output, and histories of institutions.

7.1 Uganda

Cultural heritage is an important aspect of Uganda's identity because it characterizes its aspirations, history, and evolution[21]. However, its conservation and development if faced with several challenges; lack of awareness of its value, inadequate political will and sufficient funds to develop and promote heritage, and a lack of legal instruments to protect it, as well as the negative perception attached to it as being backward. These challenges call for collective intervention to save the cultural heritage of the country. With an aim of participating in the international exchange of culture and development, a project, "World Digital Library (Uganda)", by the National Library of Uganda (NLU), and funded by the Library of congress embarked on the task to digitize the Cultural heritage of Uganda, a process which is still ongoing[22].

Makerere University successfully conducted a project to digitize the music archives, and these are currently directly accessible through the institutional repository. According to Namaganda (2011), "Digitization of cultural heritage materials is crucial for socio-economic development. The digital music archive is of great importance to ethnomusicologists, music lecturers, researchers, cultural workers, students and the general public in Uganda". This, therefore, makes a big contribution to the public because much of the music content carries historical meaning. Some members of the society access the music to connect and appreciate their ancestral origin.

7.2 Ghana

Five out of the ten public universities in Ghana, as well as six of the over 60 private universities have IRs at various stages of development and operation[23]. The Koha Integrated Library System Software and the D-Space repository are relied upon by many Ghanaian academic libraries.

In 2008, Kwame Nkrumah University of Science and Technology (KNUST) implemented the first Institutional Repository in Ghana. This significantly made them appeared 52nd in the webometrics ranking for 100 best Universities in Africa[23]. Their success resulted in the Consortium of Academic and Research Libraries in Ghana (CARLIGH) and International Network for the Availability of Scientific Publication (INASP) helping four academic institution to implement repositories namely:
 (1) University of Cape Coast, Ghana (UCC);

(2) University of Education, Winneba, Ghana (UEW);
(3) Ghana Institute of Management and Public Administration, (GIMPA);
(4) Methodist University College, Ghana (MUCG).

In all the repositories, there are electronic thesis and dissertations, reports, journal articles, and administrative materials. However, there were differences in the proportions of such components. None of the institutions had audio or audio-visual materials in its repository and also University of Ghana was the only Institution to have Heritage materials in their repository. The University of Ghana in partnership of the Royal Tropical Institute (KIT) worked together to improve conservation, preservation and publication conditions of heritage material at the university, this material consists of books, notes and manuscripts from the colonial era (1470-1958), including Dutch publications and the so called Furley collection. Also they worked together with UG on the digitization and dissemination of theses and other academic publications. Setting up an institutional repository is a key component of the partnership[24].

7.3 Tanzania
According to Mgonzo and Yonah (2014) Tanzania's higher learning institutes are aware and enthusiastic about open access repositories but have a less response towards its implementation. There is limited information available on open access repositories due to low speed uptake. The current status of open access repositories in Tanzania registered under OpenDOAR website used as an important source of data for research on open access developments and determining whether an institution has or lacks the open access institutional repositories. The analysis show only 5 open access institutional repositories are registered in OpenDOAR making a 9.8% of the 51 total higher learning institutes of Tanzania. The five higher learning institutes having open access repositories are Muhimbili University of Health Allied Sciences (MUHAS), Ifakara Health Institute (IHI), Sokoine University of Agriculture (SUA), Open University Tanzania (OUT) and St. Augustine University Tanzania (SAUT).

The major institutes' repositories in Tanzania being ranked in the rank web repositories (RWR) but there are only two institutes ranked in the overall worldwide performance thus (IHI) Ifakara Health Institutes 1060th position and (MUHAS) Muhimbili University of Health Sciences 1362nd position. Most of the known higher learning institutes in Tanzania are not ranked in the rank web repositories (RWR) because most of them are not research based institutes, hence leading to the impact of less interest in institutional repositories[25].

7.4 Nigeria
Institutional repositories in Nigeria have closely followed the open access movement in the country, though, there is currently no open access policy in the country[26], a trend which has hampered the growth of institutional repositories.

At the moment, Nigeria has eleven (11) institutional repositories (private and public universities) registered on OpenDoar[27]. Universities took the major challenge of automating their libraries, by putting some remarkable effort to source the requisite funds to digitize and archive their library resources for easier web-based access[28]. But their special collections are not readily available online as their focus has been on Theses, and Articles of their students and staff. For Kashim Ibrahim library which is the main Library of Ahmadu Bello University, UNESCO's sponsorship of the heads of six University librarians to a workshop on the use of the Greenstone open source software, sparked the library's initial interest in digitization. Additionally, digitization of theses and dissertations at the university libraries of Jos and the Obafemi Awolowo University, under the AAU-DATAD programme, provided a model for ABU to start digitizing its post-graduate theses and dissertations. The ultimate aim was to provide global access through the Internet for all the theses and dissertations accepted for higher degrees in the University. According to Fabunmi et al. (2006) library digitization has become part and parcels of librarians and information scientist, and most libraries in Nigeria are involved in digitization.

VIII. CHALLENGES FACED BY IRS
Some research identified a few of the challenges faced in Nigeria regarding IRs. Ezema (2013) reported skills for use and troubleshooting of equipment such as computer systems, scanners among others. Inadequate power supply is equally a serious problem. Musa et al. (2014) while reporting the challenges facing Digitization project in Ahmadu Bello University equally observed that constant change of hardware and software, Copyright Issues, Technical Support and Security were among the challenges facing repositories. Eke (2011) reported similar challenges at the University of Nigeria, Nssuka which includes Low Bandwidth, Technophobia, Technical Support and Security, Finance and Legal Aspects Akintunde and Ojoade (1995) while reporting the problem bedeviling the project at the University of Jos stated that lack of skilled personnel to manage the repository, Lack of adequate power supply as the electricity power sector of Nigerian is poor and it really affects

the servers that houses the repository. They equally observed lack of Support from the community: In terms of usage and uploading of content, where the response from the academic community so far is yet to meet with their expectations, even after several rounds of sensitization. However, it is evident that more responses have been received after each sensitization programme. So, the library will have to keep going after the user community and content providers.

IX. FINDINGS

From the study, it was observed that all the countries under study do not have a National Digital preservation policy on cultural heritage. This is likely to affect initiatives to digitize and use of the digital repositories. Nigeria, Ghana, and Tanzania are reported not to have national Institutional Repositories for the digital cultural heritage. Uganda , on the other hand was reported to have a project under the National Library of Uganda called the National Digital Library (Uganda), undertaking the digitization processes for the National Heritage preservation. The findings are summarised in Table 2.

Table 2: Digital preservation practices in Nigeria, Ghana, Uganda, and Tanzania

No.	Aspect	Nigeria	Ghana	Uganda	Tanzania
1.	National Digital preservation policy on cultural heritage	No	No	No	No
2.	National Digital Repository of cultural heritage (special collection)	No	No	In Progress	No
3.	Institutional policy on digital preservation of cultural heritage (special collection)	No	No	No	No
4.	Institutional digital collection of cultural heritage (special collection)	No	No	Yes	No
5.	General Institutional repository	In Progress	Yes	Yes	No

The Federal University Otuoke (Nigeria), the University of Cape Coast (Ghana), Makerere University (Uganda) and the College of Business Education (Tanzania) were institutions under the study and it was reported that all these institutions do not have policies in place to aid or guide the digital preservation of Cultural Heritage. However, it was further reported that of the four institutions, the College of Business Education even lacks an institutional repository, whereas the Federal University Otuoke is in the process of setting up an institutional repository. Of the institutions that have Institutional Repositories, it was reported that only Makerere University had a digital repository for the music archives, under the African section of the Main Library, and that the digital collection is accessible through the Institutional Repository. The University of Cape Coast was reported to have a section on Africana collection which has a special collection of and about the African literature.

Accessing the digital collection of heritage material was reported to be of a significant value because it allows access and getting knowledge about the lost or hidden cultures. This helps many people to understand and appreciate their ancestral origin, the cultural norms and values. The access to such content was reported to attract research interests from different people, who want to learn about the trends in cultures and to understand the dynamics and roots of certain cultural behaviours, beliefs and norms. However, the process of digitizing the cultural heritage still faces limited interest in many countries, whereas others lack the required resources to have it done.

X. CONCLUSIONS AND RECOMMENDATIONS

Digital preservation of cultural heritage (special collection) is a major step towards heritage conservation, and ease of access. Most Counties, however, have not taken serious steps towards enabling this process to take place. Institutional Repositories can create a suitable platform to have the digital collections stored and available for online access, if well utilized. However, the storage requires a lot of digital space and sometimes a backup in the cloud space can be an option.

The academic and research institutions, however, can take a leading role in this process, starting with the available special collection. However, digitization policies should be put in place to guide the processes and Copyright laws, Intellectual Property and Neighbouring Rights should be considered to avoid infringement.

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