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### Aims and Scope

IFLA Journal is an international journal publishing peer reviewed articles on library and information services and the social, political and economic issues that impact access to information through libraries. The Journal publishes research, case studies and essays that reflect the broad spectrum of the profession internationally. To submit an article to IFLA Journal please visit: [journals.sagepub.com/home/ifl](http://journals.sagepub.com/home/ifl)

## **IFLA Journal**

Official Journal of the International Federation of Library Associations and Institutions  
ISSN 0340-0352 [print] 1745-2651 [online]

Published 4 times a year in March, June, October and December

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SAGE, Los Angeles, London, New Delhi, Singapore, Washington DC and Melbourne.

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Printed on acid-free paper by Page Bros, Norwich, UK.



# Can journals overcome bias and make the peer review process more inclusive?

**Steven W. Witt**

Editor, IFLA Journal

*IFLA Journal* strives to make publishing original research accessible to librarians and researchers from around the world. Being a truly inclusive journal, however, faces historical, systemic, and economic barriers that make this goal difficult to achieve. It is well documented that scholars who are not native speakers of English or from regions that are less represented on editorial boards struggle to get their work accepted in international peer reviewed journals. The work of sociologist Fran Collyer provides striking evidence of bias toward the global North in both citation patterns and acceptance rates of scholars, which impacts the way in which knowledge is transferred around the world (Collyer, 2018). The problem of un-equal access to publishing opportunities and the often one-way flow of knowledge and techniques should be of great concern to the library profession as a whole since this issue impacts both the collections we build and the manner by which professional practices are shared and adopted transnationally.

The recent COPE study on issues in publication ethics documents the extent to which journal editors across the humanities and social sciences are aware of the issue of inclusivity in academic publishing. Of a survey of over 650 editors, 64% report problems of language (i.e. English) and writing quality as barriers to inclusivity. In addition, 55% of editors struggle to recognize and deal with bias in the peer review process. Among editors of Libraries and Information Technology journals, the issue of inclusivity was equally salient among respondents to the COPE study (2019). The *IFLA Journal* editorial committee and editor are keenly aware of this issue and work to avoid the continued replication of barriers to an equal transnational exchange of techniques, ideas, and professional knowledge within the field of library and information science. It is clear that there can be improvement. *IFLA Journal's* acceptance rate for submissions since 2016 is 32%, a number consistent with many academic journals. As members of a scholarly community, we consent to a

rigorous double-blind peer review process helps to ensure new ideas are promoted and the methods that drive research and discovery are sound. Submissions from Africa and the Asia Pacific region, however, are rejected at rates above the average while those from North America, Europe, and Latin America surpass the average. This is a problem for us all. Although scholars from Africa and the Asia Pacific region submit more manuscripts for review and are thus well represented in the journal, there is a clear need to work towards review processes, organizational structures, and professional development programs that can help make research and publishing more accessible to all of our colleagues in the field. Over the past several years, *IFLA Journal* has implemented policies and activities aimed to make publishing more inclusive.

As noted previously, language is one of the primary barriers to inclusivity in academic publishing. The Esperanto movement in the early 20th century attests to the fact that language is a long-standing barrier to sharing scientific knowledge. Academic writing requires language that is clear, precise, and appropriate to the professional terminology on a specific field. This is a difficult challenge for any researcher to meet when working within their first language not to mention their second or third language. To the extent possible, the journal's editorial policies attempt to decouple language from the review of the novelty, research method, methodology, and analysis of each manuscript. We ask reviewers to focus their review to the content of work and attempt to overcome challenges presented by manuscripts that have been translated or written by non-native speakers of the journal's publishing language. Rather than reject papers that are difficult to comprehend because of

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language, the editor will often return a manuscript for language editing when a paper seems to be within the scope for the journal. Through this process, *IFLA Journal* addresses language barriers within the final editorial process by providing an editorial assistant to work with authors to improve language and readability for papers that have been accepted on the merits of the research. Further steps in the editorial process require either financial resources or skilled volunteers to work with authors on improving the language within their manuscripts. This can slow down the publication process by several weeks as author and editorial assistant trade revisions. Although imperfect, this process lowers to some degree the significant barrier presented by language.

To increase representation, *IFLA Journal* changed the composition of the editorial committee. Following the practice of many international journals to have regional editors, the journal added members to its editorial committee to both increase submissions from and provide mentorship to potential authors in regions that are less represented. Working with the IFLA Professional Committee the journal added editorial committee members designated to represent the Asia and Pacific Region and the African Region in 2019. We are pleased to welcome Professor Amany M. Elsayed of Helwan University in Egypt, and Professor Diljit Singh, University of Malaya (retired). An editor for Latin America will be added by 2020. These three new members guarantee further diversity within an editorial committee of nine at-large members, which is chaired by Dean Shali Zhang of Auburn University in the USA. We hope this will help the journal avoid some of the biases described in Collyer's work. Of course, this is likely not enough to cover the breadth of diversity found within these continents.

Finally, the editorial committee aims to provide professional development to scholars and practitioners in the field by offering a series of workshops on research methods and practices. In August of 2019, the *IFLA Journal* editorial committee partnered with Sage and the IFLA Social Science Libraries Section to host a two-day workshop on qualitative research methods for library and information science practitioners. Hosted by the Laskaridis Foundation in their beautiful library in Pireaus, Greece, this workshop attracted 20 participants from Africa, Asia, Europe, the Middle East, and North America. To make the workshop accessible, the IFLA Professional Committee provided funding for 8 participants to receive scholarships to supplement costs of travel and lodging. Featuring a keynote address from Professor Judy Broady-Preston the editor of *Global Knowledge, Memory and Communication* and CILIP President,

the workshop provided participants with access to journal editors and reviewers to learn more about the publishing process and ways to better position their work for publication. Additionally, the workshop introduced students to methods and tools to equip them to design, conduct, and critique qualitative and mixed methods research. Participants explored the strengths and weaknesses of a variety of data collection methods and evaluated strategies for using and combining them. The majority of the workshop focused on issues of research design and data collection to allow participants to design projects and community programs in a manner that will allow results to be shared with the broader professional community through peer reviewed journals.

In 2020, the editorial committee is partnering with the IFLA Library Theory and Research Section and Social Science Libraries Section for another workshop on the topic of engaging in international research. Led by Professor Peter Lor, who recently published *International and Comparative Librarianship: Concepts and Methods for Global Studies*, this workshop will focus on metatheory, methodology and methods for international and comparative research within library and information science. The workshop is tentatively scheduled to take place August 13-14, 2020 in Dublin, Ireland in advance of the IFLA World Library and Information Congress. Further information will be forthcoming on the IFLA website.

Although the wide arc of history and difficult to surmount economic issues contribute greatly to unequal access and representation within academic publishing, editorial boards are increasingly striving to implement policies that will limit bias from within the peer review process. We hope the changes *IFLA Journal* is making in editorial policy and committee composition will make a positive impact on the field. Adding research and publishing workshops to these activities will hopefully disseminate what is often insider's knowledge on the publishing process and make publishing research more accessible to the global library profession.

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# Predatory publishing and the Ghana experience: A call to action for information professionals

International Federation of  
Library Associations and Institutions  
2019, Vol. 45(4) 277–288  
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DOI: 10.1177/0340035219868816  
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## Abstract

Researchers in developing countries are more likely to publish in predatory journals (Xia et al., 2015). This study investigates the understanding that research scientists in Ghana, a developing country, have about predatory journals and their publishing practices. Using a mixed methods approach, research scientists within one cluster of research organizations in Ghana were asked about their awareness of the characteristics of predatory journals, based on their own experience as a researcher. Their publications were also examined. The results indicate that most of the research scientists in this study are aware of predatory journals and are often solicited by them, but are less aware of tools they can use to determine the quality of a particular publication. In addition, 12% of the articles published that make up 24% of the unique journals in which these researchers published could be considered “predatory”. The findings of this research are significant because they indicate that research scientists may have more awareness of predatory journals than is expected, but that they may lack the training or tools necessary for deciding whether or not a journal is legitimate.

## Keywords

Developing country, Ghana, open access, predatory journals, publishing practices

Submitted: 11 April 2019; Accepted: 12 June 2019.

Since the post-war period, scholarly output has grown exponentially (Mabe, 2003), and the Internet has turned scholarly publishing on its head. Everything – from the way that researchers search for literature, to how they submit their papers, to how journals are supported – has changed. Tempest (2013) said: “As a publisher, I have never seen so much change to how journals are published as in the last five years”. He is specifically referring to the changes that have come with open access (OA) journals, which are both a product of, and an enabler of, increasing output and participation in scholarly communications. The change in scholarly communication is part of a much bigger picture, though, and it is not without

consequences. For instance, competition between universities for rankings demands ever-increasing grant funding and scholarly output. This, along with the possibilities offered by publishing on the Internet, has led to a glut of scholarly journals. This has proven to be a perfect storm for unscrupulous actors: businesses that disguise themselves as trustworthy OA publishers, promising unwitting (or perhaps complicit) quick publication.

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Scholarship and scientific output in the industrializing world, too, have recently grown. In 2005, only 1.4% of the world's scholarly output was from Africa and scholarship was not increasing due to a lack of infrastructure to support research (UNESCO Institute for Statistics (UIS), 2005). However, Schemm (2013) reported that "from 1996 to 2012, the number of research papers published in scientific journals with at least one African author more than quadrupled (from about 12,500 to over 52,000)". This growth is driven by many factors, such as "increased funding, significant policy changes within countries, improved research infrastructure, both human and physical, ICT resources, open, free and low cost access to peer reviewed literature, and research capacity building training" (Schemm, 2013). African researchers now have access to high-quality research (which was harder to come by prior to the early 2000s); for instance, the United Nations joined with Elsevier in the program Research4Life (n.d.) to give access to scientific literature (Tempest, 2013). The African Journals Online Library (AJOL, n.d.) also provides open access to many peer-reviewed journals published in Africa. These projects are just a few of many that provide access to research with Africa, and enable scholars outside of Africa to access African scholarship.

Access does not necessarily equal participation, though. Tempest says that print is still popular in Africa, but as ICT has improved, new publication models, such as green OA (in which the accepted manuscript is deposited into an OA repository and made available after an embargo), gold OA (in which the author pays an upfront fee to the publisher for immediate publication), and other models, such as self-archiving, will keep improving access to, and publication of, scholarship. Atiso et al. (2017) found that, in Ghana, OA is a necessity, as many libraries were unable to pay for high journal subscription costs and were not able to offer them to their users. However, Tempest says that for authors in Africa, "the cost of open access (in its Gold form) is too high". High-impact journals that offer gold OA tend to favor "well-funded investigators and that publishing there is increasingly difficult" (Bates, 2017: para. 1). Tempest explains that in Africa: "Open access is one way to assist in this goal, but it is crucial that these efforts are accompanied by a focus on the quality of research, not just the quantity". The tension between researchers' and their employer's expectations for high output and a lack of quality venues for quick publication is found in what has been dubbed "the predatory journal". These are journals that generally bear titles that are eerily similar to well-known academic journals,

but offer quick publication (bypassing meaningful peer review) for a fee, which is sometimes a sliding fee that rises according to the authors' desperation or unscrupulousness.

This paper presents the findings of an exploratory, mixed methods research study that investigates researcher's awareness of predatory publishing practices in Ghana. To understand more about how the phenomenon of predatory publishing affects Ghanaian researchers, characteristics of predatory journals are examined as well as the controversies surrounding such journals. Scientific publishing in Sub-Saharan Africa and Ghana is examined to understand more about why predatory publishing is of great concern in this region. Lastly, findings of a survey, interviews and a content analysis of Ghanaian research scientists' practice and knowledge of predatory journals are presented.

### Characteristics of predatory journals

The founder of the term "predatory journal" is OA scholar and critic Jeffrey Beall, a scholarly communications librarian at the University of Colorado. In the early 2000s Beall began receiving invitations to publish in and serve on the editorial board for journals that he had never heard of (Beall, 2012). After investigating the journals, he coined the name to describe these profit-driven ventures designed to exploit academics' needs for quick and hassle-free publications. He noticed that they were disguised to emulate highly ranked journals: their titles were similar, and some claimed high metrics and prestigious editorial boards. By 2008, Beall had created a list of journals, later dubbed "Beall's List" (Straumsheim, 2017). Beall developed an extensive list of journals that met his 52 criteria of predatory journals (Straumsheim, 2017). It should be noted that these publications are deceptive, but they also present a deeper problem: the articles are easily found through Google Scholar so they let shoddy science into academic discourse. When they are cited, they may eventually make their way into public discourse, generally undermining academic work and stymieing knowledge production. While Beall's list brought a lot of attention to predatory publishers, it was also controversial (the reasons for which we explain below) and Beall took it off-line in 2017.

There are reasons that predatory journals were created and why they persist. Publishing is a difficult process. Writing is hard work, and when an author turns in a paper for publication there is no assurance that it will be accepted. For instance, Schultz (2010) found that the average rejection rate for atmospheric

science journals was 38%. Reviewers might suggest numerous changes and still reject the work, which means the author will need to submit it to another journal. This process can take years, and the author might abandon the project altogether (Richardson, 2002). Academics are under intense pressure to publish a lot of articles, quickly; Truth (2012: 1) explains that the pressure to publish or perish has “spawned an exponentially growing number of dodgy academic e-journals charging high fees to authors.” Predatory journals do not have peer review, so publication is fast, and some predatory journals will speed up publication for a fee (Truth, 2012). Thus, the desperation of authors who are going up for tenure or promotion feeds the system.

In short, predatory journals’ purpose is to make money, not to publish high-quality research (Berger, 2017). They take advantage of scholars’ frustrations by offering a quick and easy path to publication (as opposed to the long, tortuous and uncertain journey of traditional publishing). The producers know that researchers’ worth is measured by publication count and that time matters. They offer a dubious solution to the “publish or perish” problem. Unlike legitimate venues, papers are rarely (if ever) rejected, which relieves the author of the extended process of revising and resubmitting the article. The author simply submits the article, pays a fee, and adds the article to his CV.

### **Predatory journals: Spotting them**

While it might seem as if it should be easy to identify predatory journals, some are wily; and, again, there are new, independent, and/or experimental journals created for the purpose of advancing scholarship, which means that they will not yet be ranked in Scopus or Web of Science (which is one way to determine a journal’s legitimacy). Beall removed his list from the Web without any prior notice or explanation in early 2017 “due to threats and politics” (Straumsheim, 2017: para. 4), though he has continued his work in some fashion through a collaboration with Cabell’s Journal Discovery Service. Nahai (2015) suggests that authors can avoid predatory publishers by first checking to see if a journal is indexed by the Directory of Open Access Journals (DOAJ). Journals in the DOAJ index use a peer review process and have also met the DOAJ’s quality measures and ethical standards (Christopher and Young 2015: 6). Crawford (2014) found that many journals on Beall’s list were actually empty and contained no articles at all. Christopher and Young (2015) found that most researchers were not aware that there are predatory journals, and even

fewer (about 5%) were aware of Beall’s list, and recommended more mentoring and training for new scholars. Xia et al. (2015) found that less experienced researchers are more likely to submit their work to predatory journals. Advanced researchers even have different opinions on what makes a good journal, depending on their university, background, and subject area. Generally, researchers agree that double-blind peer review is the gold standard which increases the quality and rigor of a journal; however, new methods of peer review (e.g. open science) have been introduced that are more transparent, kinder, and which offer comparable rigor (Walsh et al., 2000). Regardless, a rigorous review system is seen as a hallmark of good scientific publishing and the gatekeeper of good research (Goodman et al., 1994; Marsh et al., 2008).

The peer review process often takes a lot of time. Authors sometimes wait months for a review and even with rounds of reviews and revisions, there is no guarantee their paper will be accepted and published. Predatory OA journals either have a cursory review process, or forgo it altogether, promising a quick turnaround. This can be attractive for a researcher who needs some publications quickly (Xia et al., 2015). Inexperienced researchers also might not be able to identify the bad players, which is why Beall created the criteria for identifying predatory journals, upon which he based his extensive list of journals. To note is that the Committee on Publication Ethics (COPE), and the DOAJ, also provide methods for identifying the offending journals that are still being used; we begin with Beall’s list, even though it is now offline, because it was used as the basis for this study.

One of the key characteristics of a predatory journal is their persistent invitation to publish through phishing; Beall says that the journal identifies the email addresses or Facebook profiles and begins to spam the researcher with requests to publish in their journal (Beall, 2012). The journal will also send a link to their website that emphasizes their impact (e.g. Hirsh index, Google scholar citations, etc.). Sometimes the websites resemble legitimate online publishers; the website might actually closely copy a legitimate publishing house and claim to be a “leading publisher” across multiple disciplines. If the publisher lists multiple journals in its “fleet” (Beall, 2016), Beall says that scholars need to closely scrutinize each journal, independently examining the credentials of the editor and editorial board. They should not rely on the claims listed on its website. They should examine the scope of the journal – does it present a laundry-list of disciplines that it publishes? An unrefined scope (for a single journal or the fleet of journals)

should be a tip-off. The website itself might have grammatical and spelling errors or include a lot of stock photos; it sometimes links to prestigious associations' conferences or websites to gain legitimacy. The biggest tip-off, though, should be that the publisher promises the author rapid publication. However, some high-quality journals do offer fast publication; for instance, biomedical studies need to be published quickly, so fast publication does not necessarily mean that the journal is predatory.

Researchers already may be confused about the many options for publishing and predatory journals may be disguised to look legitimate (Christopher and Young, 2015; Nwagwu and Ojemenj, 2015). Crawford (2014) found that many journals identified as "predatory" on Beall's list were actually empty, dormant, or published fewer than 20 articles a year, and that the list contained bias against for-profit journals, journals from developing countries, and those from the global south that were good journals (with peer review processes and editorial boards) that just charged author fees. Olivarez et al. (2018), too, found that many journals on the list were actually top-tier journals and recommend different criteria for determining what a predatory journal is and is not. As Nwagwu and Ojemenj (2015: 60) explains, it is "too early in the life of OA to describe some OA publishers and journals as completely predatory because they do not meet the standards or adopt the methodologies of existing distinguished and established publishers and their ethos".

DOAJ (2018) has published *Principles of Transparency and Best Practice in Scholarly Publishing* that was developed with COPE, the Open Access Scholarly Publishers Association (OASPA), and the World Association of Medical Editors (WAME). This service includes a "whitelist" of journals that have been added or removed from the DOAJ site and is less critical in tone than Beall's description of predatory journals, focusing instead on guidelines can help an author distinguish good publishers. This list includes 16 principles that an author should consider (which is, admittedly, not an easy task). Some of the easier directives are to look at the website which should "demonstrate that care has been taken to ensure high ethical and professional standards" (DOAJ, 2018: principle 1) and the governing body should include "editorial boards or other governing bodies whose members are recognized experts in the subject areas included within the journal's scope" (DOAJ, 2018: principle 5). Fees should be "clearly stated in a place that is easy for potential authors to find prior to submitting their manuscripts for review or explained to authors before they begin preparing

their manuscript for submission" (DOAJ, 2018: principle 8). However, there are other guidelines that might be difficult to discern, including the journal's name itself: "The Journal name shall be unique and not be one that is easily confused with another journal or that might mislead potential authors and readers about the Journal's origin or association with other journals" (DOAJ, 2018: principle 2). Regarding research misconduct: "Publishers and editors shall take reasonable steps to identify and prevent the publication of papers where research misconduct has occurred, including plagiarism, citation manipulation, and data falsification/fabrication, among others" (DOAJ, 2018: principle 9). This is all excellent advice, but a novice researcher might have difficulty distinguishing which journals are good, because the predatory journals have seen this list and do make efforts to appear legitimate.

Berger (2017) acknowledges that identifying predatory journals is difficult, and that it is librarians' roles to educate users. She begins by stating the real complexity of the situation of new publications: some are, indeed, deceitful, but others are simply low-quality, and might be from countries that have been traditionally excluded from scholarly publishing: "Checking our privilege is important as well: many predatory journals are based in the Global South (less developed countries) and it is all too easy to make insensitive generalizations" (Berger, 2017: 207). Another characteristic of a predatory journal is that even "legitimate journals may lack ISSNs, indexing, impact factor, and other qualities of larger monied journals. Less than stellar English is also not a meaningful indicator" (p. 210). She lists 15 tip-offs that might identify the bad seeds, including spam emails sent to conference attendees, contradictions between the journal's scope and its content, and an exceedingly broad scope (e.g. "the Journal of Research and Opinion"). However, other qualities are not easily discerned until it is too late, such as not giving the author any opportunities for revision, publishing without consent, or refusing to retract an article without a payment. Berger's main point is that librarians can, and should, help authors (including students) identify quality OA publishing venues through education – including making handouts and providing consultations with researchers, as no writer should ever be discouraged from publishing in an OA journal. She says that that users and librarians should not be "dependent on blacklists" (p. 214) and that conversations about predatory publishing is actually a way to have meaningful and positive conversations about scholarly communication, writ large. Some low-quality or amateur journals maybe have been

blacklisted when they are not predatory at all (Berger, 2017; Crawford, 2014), and younger journals might actually offer fresh perspectives in science and break new ground. The various OA models are also confusing; some OA journals do not charge an author fee, but some very prestigious journals in the sciences do, though they will sometimes waive the fee if the author is not grant-funded (Berger, 2017).

### Complicity and controversy

Berger advocates for education. Beall used the blacklist. However, other researchers have been involved in stings that demonstrate problems with predatory journals and respected journals. Most notorious was when Jim Bohannon, under an assumed name, submitted a badly flawed (read: fake) journal article to 304 OA journals. He explains, in *Science Magazine*:

Acceptance was the norm, not the exception. The paper was accepted by journals hosted by industry titans Sage and Elsevier. . . . The rejections tell a story of their own. Some open-access journals that have been criticized for poor quality control provided the most rigorous peer review of all. For example, the flagship journal of the Public Library of Science, PLOS ONE, was the only journal that called attention to the paper's potential ethical problems. (Bohannon, 2013: 61)

Other researchers have found evidence of publication bias as well. Lexchin et al. (2003) found that research that was sponsored by pharmaceutical companies showed bias in favor of pharmaceuticals; a 2018 investigative report exposed one of the US's top cancer journal's failure to disclose corporate financial backing of research (Thomas and Ornstein, 2018). Such cases illustrate that even though double-blind peer review is widely considered the 'gold standard', it is not perfect, and financial considerations produce bias even in top journals.

Findings that demonstrate corruption are bound to make researchers cynical: why not send researchers in where it will be published quickly and with little hassle? Are researchers, in fact, unaware of the fact that they are being duped, or do predatory journals continue to proliferate because researchers are supporting them? Kolata (2017: para. 5) said, "it's increasingly clear that many academics know exactly what they're getting into, which explains why these journals have proliferated despite wide criticism. The relationship is less predator and prey, some experts say, than a new and ugly symbiosis".

There is, in fact, some indication that researchers know they are publishing in a predatory journal but do not care. Beall (2016) and Berger (2017) suggest

that the email campaign is so enticing, and persistent that many researchers finally agree to participate. Google Scholar will still index a predatory journal, and altmetrics, which includes Google Scholar, is gaining traction in university bean-counting (this is not necessarily a bad thing in general). A study by Pyne (2017) found that faculty at his school still earned promotions and research awards despite having evidence of publishing in many predatory journals. Not only did publishing in predatory journals not hurt their careers, it helped them to get ahead. However, this might not be true in all institutions. Karanu (2017) said that publishing in predatory journals can damage the reputation of researchers who are unable to remove their work from the poor-quality journal.

Is this true around the world? Are scholars in the Global South more susceptible to publishing in predatory journals, or is there something else going on? Though there are many aspects to publishing that are the same in Africa as in any other part of the world, there are also some factors that are unique to the African scholar that are worth mentioning. For one, African scholarly output has not always been as prevalent as it is now, doubling since the early 2000s (Schemm, 2013). At one point, the number of scientific publications originating from the African continent was one of the lowest in the world (UIS, 2005). Ondari-Okemwa (2007) suggested that environmental, social, and economic factors once made it very difficult for scholars in this region to both access peer-reviewed literature, and submit work for publication. Castells (1998) described how Africa was experiencing a technical apartheid due to the lack of pervasiveness of the Internet and basic infrastructure problems like regular access to electricity. Since then, there have been many improvements in Africa that have contributed to the growth of research. Several non-profit organizations have created more access to peer-reviewed research (like the Program for Enhancement of Research Information (PERI) and now Research4Life), while the government has also significantly invested in research and development (Schemm, 2013).

Inadequate resource funds are specifically a known problem for research universities in western Africa. Weng'ua et al. (2017) describe how Kenyan universities are reliant on cooperative initiatives to support access to information resources, like the Kenya Library and Information Service Consortium, or PERI which was also accessible in Ghana until it ended in 2013 (Hanley et al., 2012). Since 2012, Research4Life, a public-private partnership, has provided access to scholarly research for qualifying developing

countries, including many in western Africa. In addition to providing access to research, Research4Life collaborates with DOAJ to ensure that the quality of OA journals in their database meets specific criteria (Berger, 2017). Research4Life also provides training and consultations to researchers in the countries they serve to teach researchers more about the scientific research process, writing and managing electronic information (<https://www.research4life.org/>).

This study examines a particular population of research scientists in Ghana (a developing country) to understand why they might fall prey to the ploys of predatory journals. Christopher and Young (2015) found a low awareness of predatory journals by the young and inexperienced researchers in their study, with only 23.0% of the respondents being aware of the term “predatory journal”. Xia et al. (2015) also found that researchers from developing countries were the primary authors in predatory journals. Is the problem that they are unaware of the problem, or do they simply not care? Or, might publishing in predatory journals be attractive to researchers who face so many challenges to publication? Research scientists in Ghana were asked about their awareness of predatory publishing and how they identify predatory journals. Thus, this research provides insight into the publishing knowledge of scientists in a developing country in order to identify ways to strengthen the publishing output of Ghana by helping scientists locate their work in respected venues where their voices can contribute to an understanding of global problems.

### Goals of this study

There are two parts to this study: a survey with follow-up interviews, and an analysis of publications. The survey specifically asks research scientists from a single research cluster in Ghana, a developing country, about their understanding of predatory journals, while participants elaborated and verified the survey results in follow-up interviews. As an exploratory study, this study seeks to gather an initial understanding of what research scientists in Ghana understand when seeking a journal for publication. The findings of this study are helpful for librarians who provide training to scientists on predatory journals and scientific publishing. This study is guided by the following questions:

1. How aware are Ghanaian research scientists about the characteristics of predatory journals?
2. Can research scientists in Ghana identify a predatory journal?
3. In which journals do Ghanaian research scientists publish?

### Methods

This mixed methods study consisted of a survey, interviews, and an analysis of publication venues of the same group of scientists. The survey asked about Ghanaian research scientists’ awareness of predatory journals. Research was conducted via survey because it is the best way to reach the participants who are located in various research locations. These research centers (known as institutes) are spread across the country, based on the needs of the community. The survey used in this study was delivered online and designed specifically for this research. Questions were developed to identify researcher understanding of the characteristics of predatory journals as indicated by Beall (2012), Berger and Cirasella (2015) and Christopher and Young (2015). The survey was analyzed using simple descriptive statistics. Afterwards, five participants volunteered to participate in additional follow-up interviews. Interview questions were designed to allow participants to elaborate on the survey questions and also verify the survey results. Interviews were held in two languages (English and Twi, one of Ghana’s common languages). Participants in the study also provided a list of their publications, which were analyzed to understand more about where researchers are publishing in this cluster. Each publication was examined in Cabell’s Journal Discovery Service for presence on the whitelist or blacklist, and crosschecked with the DOAJ’s list of removed publications and the community-driven “Stop Predatory Journals” journal list (<https://predatoryjournals.com>). The “Stop Predatory Journals” website is an emerging blacklist created by anonymous researchers who wish to anonymously report a journal or publisher for lacking sufficient transparency or quality metrics (Singh Chawla, 2018).

### Participants

Participants were selected through a cluster sampling procedure that was used to identify research scientists from within a one of Ghana’s foremost research organization, the Council for Scientific and Industrial Research (CSIR, 2017). Within the CSIR cluster, four out of 13 research institutes in the CSIR cluster were selected to participate in the study. The survey was sent to an institutional listserv, inviting researchers to participate in the study: 25 respondents, representing 26% of the total research scientists’ population at these four CSIR sites, participated in the survey (see Table 1.). Five chose to also participate in follow-up interviews. In addition, the publications of 31 research scientists within one of these institutes was

**Table 1.** Demographic breakdown of survey respondents.

	Participants (N)	%
<b>Institute</b>		
Animal Research Institute	10	40
Food Research Institute	5	20
Forestry Research Institute of Ghana	5	20
Water Research Institute	5	20
<b>Gender</b>		
Male	17	68
Female	8	32
<b>Age</b>		
31–35	5	20
36–40	10	40
41–45	4	16
46–50	2	8
51–55	2	8
56–60	2	8
<b>Educational Qualifications</b>		
Master of Arts/Master of Science	11	44
Master of Science	8	32
Doctor of Philosophy	5	20
Other	1	4
<b>TOTAL</b>	<b>25</b>	<b>100</b>

examined to determine the extent of publishing in predatory journals.

## Results

This study investigates the awareness of predatory journals among research scientists. Respondents were first asked to indicate whether or not they were aware of the concept of predatory journals, and then whether they were familiar with tactics used by predatory journals. Then, a content analysis of one cluster of research scientists' publications was conducted to understand more about where they publish.

Almost all of the respondents (92%) indicated that they had been invited by journals that appeared to be predatory. The extent to which respondents can quickly spot a predatory journal was tested with a number of statements (see Table 2). Participants were asked if predatory OA journals accept articles quickly and with little or no peer review or quality control. More than half (80%) of the respondents agreed with the statement. A little over half (56%) of the respondents agreed with the statement "predatory OA journals notify academics of article fees only after papers are accepted", and a little over a third (36%) remained undecided about the statement. Of the respondents 84% agreed with the statement that predatory OA journals aggressively campaign for academics to

**Table 2.** Awareness of characteristics of predatory journals.

Statement	Agree		Undecided		Disagree	
	Freq.	%	Freq.	%	Freq.	%
Predatory Open Access Journals accept articles quickly with little or no peer review or quality control	20	80	1	4	4	16
Predatory Open Access Journals notify academics of article fees only after papers are accepted	14	56	9	36	2	8
Predatory Open Access Journals aggressively campaign for academics to submit articles or serve on editorial boards	21	84	2	8	2	8
Predatory Open Access Journals list academics as members of editorial boards without their permission and will not allow academics to resign from editorial boards	13	52	6	24	6	24
Predatory Open Access Journals appoint fake academics to editorial boards	15	60	3	12	7	28
Predatory Open Access Journals mimic the name or web site style of more established journals	19	76	3	12	3	12
Predatory Open Access Journals give misleading claims about the publishing operation, such as a false location	16	64	7	28	2	8
Predatory Open Access Journals state fake or non-existent impact factors	17	68	6	24	2	8

submit articles or serve on editorial boards. Slightly over half of the respondents (52%) agreed with the statement that predatory OA journals list academics as members of editorial boards without their permission. More than half (60%) agreed with the statement that "predatory open access journals appoint fake academics to editorial boards", while 76% agreed with

the statement that “predatory open access journals mimic the name or web site style of more established journals”. The majority agreed with the statement “predatory open access journals give misleading claims about the publishing operation, such as a false location”, with 28% (n=7) undecided. Finally, more than half (68%) agreed with the statement: “predatory open access journals state fake or non-existent impact factors”, with 24% (n=6) indicating that they were undecided.

Researchers also investigated participants’ knowledge of Beall’s list and DOAJ. At the time of this research Beall’s list was available online. Among respondents 48% were aware of Beall’s list, and 52% were not. Only 40% of the respondents were aware of the DOAJ.

### Interviews

Researchers from within four different areas of the CSIR cluster volunteered to participate in follow-up interviews. Researchers were asked to verify the findings of the survey results, as well as elaborate on the survey questions. All (n=5) interview participants verified that the survey results were accurate (or most likely accurate). All (n=5) interview participants also indicated that they were aware of predatory journals and that they learned about them through the experience of being solicited, or by colleagues who were solicited. One participant from Nutrition and Waste Management explained that his awareness of predatory journals came from a “constant barrage of emails [from predatory journals]”. Participants varied in whether they thought that their colleagues were aware of predatory journals though. Three participants thought that the majority of Ghanaian scientists understood about predatory journals, though all thought it was possible there were some that did not. In addition, one participant from Biotechnology said, “I want to believe so” when asked if he thought that most research scientists were aware of predatory journals. The interview participants all felt that predatory journals were not really discussed amongst their colleagues and one participant from Agribusiness even said, “I believe most people have heard about them by this time”. All participants also felt like publishing in a predatory journal would create “a bad image of you” and be embarrassing for the researcher.

Participants were asked to elaborate on how they choose which journals to publish in. While one participant from Nutrition and Waste Management indicated that he used Beall’s list and Scopus (however he did not know that Beall’s list was taken down), the others indicated that they chose journals based on the

emails that they received. Participants were asked why they thought others might publish in a predatory journal. All agreed that the “publish or perish” process was the most common reason that someone would want to publish in a predatory journal. A participant from Poultry Nutrition stated that: “the need to publish at all costs [makes someone want to publish in a predatory journal]. For instance, I need one more paper on which I am first author before I can be promoted”. One participant from Biotechnology explained that: “I know a friend who published a paper in Nature Magazine and had a good job just because of that one paper. The recognition [for publishing] is superb, but people get caught up in it because of the pressure to publish”.

Participants were also asked what librarians might do about the problem of publishing in predatory journals. The participants recommended that “constant education” (this may be referred to as “professional development” in the United States) and providing researchers with an updated list of predatory journals would help. One participant also asked for impact factors to be included in the list of predatory journals; however, he did not know that predatory journals may also have impact factors.

### Journal analysis

The publications of 31 research scientists within one institute within the CSIR cluster were examined. The authors believe this data compares favorably to those of the other institutes because of previous common projects. A journal was considered “predatory” if it was identified on Cabell’s Blacklist, or the lists provided by the Stop Predatory Journal’s Community. The journal analysis found that these research scientists (n=31) had published 128 articles during their tenure at this institute. Of these 128 publications, 15 of them were considered to be predatory journals (12%) by the Stop Predatory Journal’s Community (n=13), Cabell’s Blacklist (n=2) or the DOAJ “removed” list (n=10) (see Table 3). In particular, there were 38 unique journals in which research scientists from this cluster had published, and nine of them were labeled as predatory (24%).

Publications were also examined for location of the publication to understand more about which journals respondents published in, as well as which country of origin the publication was in. Respondents primarily published within Ghana (n=49), but also published internationally quite frequently (see Table 4). Respondents published most frequently in the *Ghanaian Journal of Animal Science* (n=21), followed by *Tropical Animal Health and Production* (n=16). All

**Table 3.** One research cluster's unique journal titles considered predatory by Cabell's Blacklist or the Stop Predatory Journal Community.

	Number of published articles	Dates of publication	Cabell's Blacklist	DOAJ "Removed" List	"Stop Predatory Publishing" List
International Journal of Agriculture and Biology	1	2006	Yes	Yes	No
Journal of Pharmacognosy and Phytochemistry	1	2015	Yes	Yes	No
Journal of World's Poultry Research	1	2011	No	Yes	Yes
Online Journal of Animal Feed and Research	7	2012; 2013; 2014	No	Yes	Yes
Journal of Animal Science Advances	1	2013	No	No	Yes
International Journal of Current Research and Academic Review	1	2014	No	No	Yes
Advanced Journal of Agricultural Research	1	2013	No	No	Yes
iMed Pub Journals	1	2015	No	No	Yes
Journal of Veterinary Medicine and Animal Health	1	2010	No	No	Yes

of the journals that are published in Africa are available as open access on the African Journals Online database (AJOL, <https://www.ajol.info/>). Almost 50% (n=63) of publications were published within African journals originating from Ghana, Kenya and Nigeria.

### Discussion and recommendations

Research scientists, including those in developing nations, are targeted on a regular basis to publish in predatory journals. The scientists in this study indicated that they were aware of predatory journals, solicited frequently through email and most were cognizant when they were targeted. Some researchers in this study were aware of the tools that could help them evaluate journal quality, like Beall's list and the DOAJ, but many were not, or had incomplete knowledge of all of the traits of predatory journals. Inadequate training has also been cited as one reason that a researcher might be lured into accepting an invitation from a predatory journal (Christopher and Young, 2015). Participants in this study also thought that professional development related to predatory publishing would be useful. Regular training has the potential to help new researchers learn about different publishing models in an evolving scholarly landscape. In a similar study that examined the readiness and awareness of research scientists to use institutional repositories,

Atiso (2017) found that researchers in Ghana receive very little training due to lack of funding and preparation of staff. In view of the fact that junk scholarship might not relate solely to predatory journals (see Dyer, 2010; Lexchin et al., 2003; Sokal, 2000 as examples), this study recommends a broader approach for assessing research quality. Beall is credited for exposing junk science, but at the same time he was criticized for having a myopic view of research quality. This, according to his critics, hampered his ability to properly distinguish between predatory journals, lower quality journals, or even new and experimental journals.

Ghana does not have a high scholarly output (Scimago Journal and Country Rank (SCI), 2019). Analysis of the publications in this research cluster indicate that these scientists do publish in Ghanaian or African journals about half of the time, but also publish frequently in international journals. A surprising number had published in predatory journals at some point in their career indicating that while some may be aware of predatory practices, others may not. Also, there was no evidence of publishing in predatory journals since 2015, indicating that efforts to increase awareness about predatory practices may be working within this research cluster. Several participants in this study describe that there is significant institutional pressure to publish (in any type of journal) to get promoted.

**Table 4.** One research cluster's publication summary (not including journals that are listed on Cabell's Blacklist or the Stop Predatory Publishing List).

Country	Journal	Occurrences (N)
Ghana	Ghanaian Journal of Animal Science	21
	Ghanaian Journal of Agricultural Science	12
	Journal of Ghana Science Association	9
	Agricultural and food Science Journal of Ghana	3
	Ghana Medical Journal	1
	Ghana Journal of Science	1
	Ghana Library Journal	2
	Kenya	Bulletin of Animal Health and Production in Africa
Nigeria	Nigerian Journal of Science	1
	Tropical Veterinary	2
Portugal	Tropical Animal Health and Production	16
Colombia	Livestock Research for Rural Development	11
USA	Poultry Science	2
	Violence Against Women	1
	Visitor Studies	1
	Journal of Applied Poultry Science	1
	Veterinary Parasitology	1
United Kingdom	Journal of Animal Science and Biotechnology	1
	Food Chemistry	5
	Journal of Veterinary Medicine	2
	British Poultry Science	1
Canada	Journal of Complementary and Integrative Medicine	1
Turkey	Journal of Animal and Feed Research	1
Finland	Journal of Animal Breeding and Genetics	2
Romania	Journal of Identity and Migration Studies	1
Germany	Parasitology Research	1
Australia	Veterinary Microbiology	1
International	Experimental and Applied Acarology	1
	Applied Animal Behaviour Science	3

The African Journals Online Database (AJOL) provides OA to peer-reviewed journals in Africa that meet specific criteria. While the researchers of this study were aware of AJOL, its value was made clear when all of the African journals in which the researchers in this study had published were found to be available as OA in AJOL. This indicates that there is now a plethora of regional research freely available to the African research community and population. This is a model that other countries should consider to enhance visibility of research. These journals did not appear in Cabell's and are less visible in subscription databases, like Ebscohost or Proquest, which illustrates a great divide for African scientists in breaking into the world publishing market, and marketplace of ideas as well. The world needs to hear from Africa.

This study also illuminates the global need for peer-reviewed journals to invite scholars from developing countries to participate as peer reviewers and editors for peer-reviewed journals. Opportunities for participating in the publishing process will help to diversify the peer review process which is severely lacking in representation from developing countries (Publons, 2018), as well as provide African researchers with more opportunities to participate in peer review and make connections with other scholars around the world. The problems of one nation are the problems of the world, and the best way to solve global issues is with global participation.

As an exploratory study, these findings can start a conversation about what librarians can include when designing training for researchers on publishing. The findings reiterate Schemm's (2013) point: access to resources are only one part of the equation for success, and training is essential to prepare a researcher to publish in peer-reviewed journals. Similarly, Berger (2017) said that librarians should be working with scholars to help them identify good journals for their publication needs, rather than to only rely on a blacklist. In short, training and mentorship are essential to help African scientists catch up with western peers and to help them identify the best venues to communicate their scientific work, and avoid low-quality or predatory venues.

Finally, it must be noted that while research scientists may be at the forefront of academic scholarship, they are not trained information professionals. This therefore puts the bulk of the duty on librarians to initiate programs aimed at enlightening researchers on new informational trends with academic scholarship. This kind of program must be ongoing and must involve all stakeholders. Information professionals have thus been called to action to help salvage the situation.

## Conclusion

Publishing in predatory journals is not a problem specific to researchers in developing countries, but researchers have found that research scientists in developing nations are more likely to fall prey to their tactics. This research did not explore why this happens, but it did find that most researchers in one developing nation, Ghana, know about predatory publishing, that they are familiar with some of the identified characteristics of predatory journals, but that more extensive training could benefit many of the researchers because they are still publishing in questionable journals. Researchers and consumers of research need to be able to identify predatory journals. Researchers who publish in the most respected journals often have extensive support networks including grant-writers, well-funded libraries, and colleagues that they attend conferences with to expand their research agendas. This is a privilege that researchers in smaller institutions or institutions within developing countries may not have. Librarians at research institutions are in a prime position to support researchers in their selection of quality journals for publication, as well as provide training and access to resources that allow a researcher to select quality journals independently.

## Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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# An examination of IFLA and Data Science Association ethical codes

International Federation of  
Library Associations and Institutions  
2019, Vol. 45(4) 289–301  
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sagepub.com/journals-permissions  
DOI: 10.1177/0340035219849614  
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## Abstract

This paper compares the 2012 International Federation of Library Associations and Institutions' Code of Ethics for Librarians and Other Information Workers and the 2013 Data Science Association's Data Science Code of Professional Conduct and discusses the disjuncture and related considerations that might strengthen practical understandings of the implications of ethics in library and information professional practice. This paper cautions against conflating a data scientist's ethical framework with those of the traditional librarian and supports the development of a more robust framework for library and information ethics and a more comprehensive and inclusive framework for thinking about and conceptualizing data ethics.

## Keywords

Code of ethics, data ethics, Data Science Code of Professional Conduct, IFLA Code of Ethics for Librarians and Other Information Workers, information ethics, library ethics

Submitted: 14 January 2019; Accepted: 6 April 2019.

## Introduction

Data is a multi-faceted and complex concept that makes data studies and data research interesting, challenging and interdisciplinary. Evidence of the multi-faceted nature of data can be found in prior research (Shiri, 2014) that delineates the different aspects and facets of data, such as by creation, by nature, by context, by creator, by processing, by publication, by structure, by format, and by access. A depiction of various data facets can be found in Figure 1.

It is vital for the library and information science community to provide coherent and critical perspectives of data science, data research and data studies in order to offer a framework of thought, research and practice. Given the long-standing contribution of information science to the conceptualization and understanding of the nature of data, information and knowledge by authors such as Zins (2007), Rowley

(2007) and Badia (2014), it is reasonable to assume that disciplinary traditions and methodological and theoretical approaches and frameworks have the potential to shed light on the new ways of addressing, researching and making use of data in a wide variety of activities, disciplines and contexts. This kind of research may call for cross-disciplinary examination of the ways in which the data science community and the library and information studies community conceptualize, address and operationalize ethics.

In his paper entitled 'Information ethics in the twenty first century', Paul Sturges (2009) posits information ethics, in the context of discourse of

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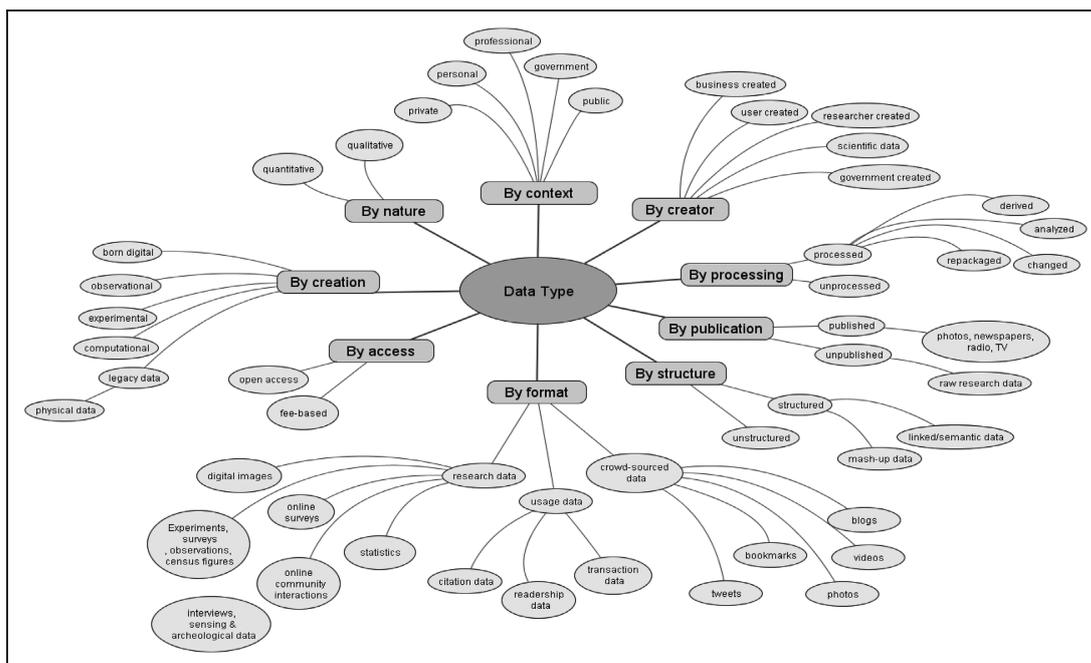


Figure 1. Facets of data.

information science, 'has tended to grow out of discussion of the ethics of librarianship' (2009: 242). He explains this 'professional convergence, driven by the growth of the Internet and digital access, shifts emphasis, but there is a core of intellectual freedom issues, privacy and secrecy, concerns with social equity and justice and matters regarding ownership of information that show differing faces across all of the domains' (2009: 242). More recently, Luciano Floridi and Mariarosaria Taddeo's (2016) pre-print entitled 'What is data ethics?' discusses how data ethics has emerged in the broader ethics ethos, most recently building on computer and information ethics. They suggest 'the shift from *information* ethics to *data* ethics is probably more semantic than conceptual'. In both scenarios, they note, interest is in moral dimensions and problems and corresponding practices and solutions (Floridi and Taddeo, 2016). This angle generated our interest in professional codes and labour rights and responsibilities.

This paper builds on previous scholarship and examines the emergence of data ethics through a library and information ethics perspective. The main objectives of this paper are to provide a comparison of the 2012 International Federation of Library Associations and Institutions (IFLA)'s Code of Ethics for Librarians and other Information Workers (2012) and the 2013 Data Science Association (DSA)'s Data Science Code of Professional Conduct (2013) and to discuss the disjuncture and related considerations that might strengthen practical understandings of the implications of ethics in library and information professional practice. This

kind of comparative content analysis grounds ethical considerations in practical terms and ties into a myriad of professional challenges in critical decision-making for contemporary library and information workers. Examples may include ethical dilemmas presented by access to information, the right to know, the right to be forgotten, privacy and confidentiality, intellectual property, and data protection. With the emergence of data ethics, and the quest to explore an ethos of library and information ethics to data ethics, this paper cautions against conflating a data scientist's ethical framework with those of librarians and other information workers. The paper also reinforces the need for attention to librarians and other information workers, as well as data scientists, in labour studies. As a disclaimer, this short and focused paper is a treatment of ethics, but not justice, information justice or data justice.

The comparison of the two codes is a valuable experimental endeavour for identifying and informing critical considerations and nuances in exploring data ethics versus library ethics. However, it is a limited scholarly enterprise focused on just two different documents. Professional decision-making may be guided by codes of ethics, but not necessarily enforced, as is the case with IFLA's code. Codes of conduct, on the other hand, especially those imposed by an employer, may look relatively different and may be enforceable within labour terms. To illuminate how our comparison can be developed into other information ethics lanes, we complement our two-document analysis with concise mention of sister documents produced by the Association for Computing Machinery (ACM)

**Table 1.** Comparison of code of ethics and code of conduct.

2012 IFLA Code of Ethics for Librarians and Other Information Workers	2013 DSA Data Science Code of Professional Conduct
access to information responsibilities towards individuals and society privacy, secrecy and transparency open access and intellectual property neutrality, personal integrity and professional skills colleague and employer/employee relationship	competence scope of data science professional services between client and data scientist communication with clients confidential information conflicts of interest duties to prospective client data science evidence, quality of data and quality of evidence maintaining integrity of the data science profession and misconduct

and the Association of Records Managers and Administrators (ARMA).

### Materials and methods

This paper uses a combination of qualitative and quantitative analysis methods to map the DSA's Data Science Code of Professional Conduct (2013) to the IFLA's Code of Ethics for Librarians and Other Information Workers (2012). A quantitative approach using an Excel spreadsheet was used to compare and contrast the terms and themes in the two codes *on a clause-by-clause basis*, layered with a semantic analysis of the words to further ascertain common and different themes and topics.

The rationale for the choice of IFLA's Code of Ethics for Librarians and Other Information Workers and the DSA's Data Science Code of Professional Conduct is twofold. First, IFLA – formed 1927 and currently reporting 1400 members (associations and institutions) in over 140 countries – is one of the long-standing library and information associations in the world that for decades has developed codes of ethics for library and information professionals (IFLA, 2019). Its 2012 Code of Ethics for Librarians and other Information Workers represents an established ethos of articulating ethics for the global information professions, transcending the limits of national library and information bodies and boundaries. As such the IFLA code is an obvious and useful reference point for emergent rhetoric across the global information professions. Second, with the rise of data-related developments, including data studies, data science, data librarianship, and data ethics, it is timely to select the DSA as a comparative case in order to identify similarities and differences between the two professional codes and the ways in which these two different communities conceptualize and formulate ethical

considerations around data in this increasingly digital and data-intensive environment. For a full comparison on a clause-by-clause basis, see Appendix 1.

Table 1 provides a comparative overview of the six thematic sections featured in IFLA's Code of Ethics for Librarians and Other Information Workers (2012) and the eight rules introduced by the Data Science Code of Professional Conduct (2013).

Using the range of elements found in these frameworks, the comparative content analysis data was further analysed for commonalities and differences. The analysis shows some overlaps by concept (e.g. professionalism, confidentiality). Following on Floridi and Taddeo's paper (2016), mutual attention to these concepts shows how emergent data ethics can bridge from library and information ethics in terms of categories on professional documents. We also identified critical content gaps. For example, free speech in the workplace and whistleblowing, two significant labour considerations in the 21st century on a global scale, only appear in the IFLA code. Following on Sturges (2009), this illustrates an incomplete flow of library and information ethics forward into data ethics.

### Results

The emergent gaps between the two codes expose key differences between the professional work of data scientists and librarians and other information workers. Particularly notable is the impact that the expectation of advocacy plays in distinguishing between the two.

Librarians and other information workers are urged to strive for transparency of information. This directive teases out an active advocacy responsibility that is not apparent in the DSA code and this is not surprising. Directives around advocacy in a code of conduct would have to be very prescriptive. The Library and Archives Canada, Code of Conduct: Values and

Ethics (2013) originally framed librarians and archivists speaking at conferences and teaching as so-called ‘high risk’ activities (McGrath, 2013).

The combination of no enforcement authority coupled with the expectation of advocacy results in vulnerability for librarians and other information workers who go out on a limb with their commitment to professional ethics. As an example, librarians and other information workers who express their intellectual freedom through workplace speech or engage in whistleblowing as encouraged by the IFLA rhetoric could actually put themselves in peril with their local communities and administrations. A code of ethics without a defence structure is debilitating. The restrictive nature of the DSA’s Code of Professional Conduct (2013) does not invite this problem.

The IFLA code is framed as permissive by listing things one is encouraged to do. On the other hand, the DSA code is framed as cautionary by listing things one should refrain from doing. IFLA encourages non-enforceable compliance as a positive act. DSA discourages non-compliance by making it grounds for misconduct, a negative act. In the specific context of our very small-scaled analysis, we would suggest we do not see data ethics as automatically growing out of library and information ethics. What we can see, though, is problematic for an unregulated profession. And this raises important questions about violations of ethics and related due process. Implications for this work transcend an interest in data and extend into scholarship in the professions and labour studies.

## Findings

Our analysis concentrates on the differences between the two codes because they are significant. The discussion is organized into key themes that emerged in the literature and in the analysis, and which tease out some important differences in understanding the professional work of data scientists and librarians and other information workers. These are: data vs. information; clients vs. users; private vs. public; exclusivity vs. inclusivity; information as a strategic asset vs. as a public good; and, cautionary vs. permissive approaches to professionalism.

### Data vs. information

The DSA (2013) defines *data* as:

a tangible or electronic record of raw (factual or non-factual) information (as measurements, statistics or information in numerical form that can be digitally transmitted or processed) used as a basis for reasoning, discussion, or calculation and must be processed or analyzed to be meaningful.

According to the DSA, *data science* means ‘the scientific study of the creation, validation and transformation of data to create meaning’. *Data scientist*, in DSA terms, refers to ‘a professional who uses scientific methods to liberate and create meaning from raw data’ (Data Science Association, 2013).

Interestingly, the DSA Code of Professional Conduct (2013) defines ‘data’ and ‘knowledge’ but not information. *Knowledge* is information backed by scientific evidence that creates meaning. In this realm, it is the role of the scientist to make meaning of raw data that is available; the client is dependent on the manipulation and interpretation of the scientist. In the library realm, however, librarians and other information workers provide access to final form information, including helping to find/source it, but the user is responsible for interpreting the meaning that is attributable to it. The data scientist provides a ‘value-added’ service to data; librarians and other information workers connect the user to data/information, but do not enhance/interpret it in any way – in fact, are expected to refrain from judgement.

### Clients vs. users

IFLA/librarians use the term ‘users’; the data science code refers to ‘clients’. What, if anything, does this imply about fundamental differences in duty, confidentiality and commodification of underlying data/information? The broader literature suggests ‘customer service’ and ‘value-added’ are contemporary phrases that are in common use in both publicly funded and not publicly funded library and information organizations and settings.

### Private vs. public

The data scientist is dealing with datasets that are not necessarily publically available, often private (this may shift as more research data is available with open access or potentially hacked). While confidentiality of information is conditional for a data scientist, librarians and other information workers are accessing information that is ‘publicly’ available (or within the realm of the institute under consideration), and therefore do not have a confidentiality issue with the information itself (although there is a responsibility not to identify the user with the information).

### Exclusivity vs. inclusivity

A significant portion of the DSA Code of Professional Conduct (2013) is dedicated to conflict of interest provisions. The data scientist is in a contractual relationship (which may be explicit or implicit), which

may specify or impose a level of exclusivity. The DSA code further imposes exclusivity provisions. A librarian (especially in the traditional setting where access to information is not exclusive) is not subject to such restraints – in fact, acts as a public resource connecting all users, on an equitable basis, to any information that is available. The librarian is not subject to conflict of interest concerns.

### *Strategic asset vs. public good*

In the data science world, data may be owned and capitalized upon for profit-maximization; the scientist's services are a value-added commodity to be marketed. Ownership of specific data and/or the ability to manipulate can be a strategic asset to be offered to the marketplace. Librarianship advocates for universal access whenever possible.

### *Cautionary vs. permissive*

The data scientist has a duty of care as a professional; within the DSA code, the data scientist is held to the standard of reasonableness and the code provides a number of specifics about how one's duties should be executed. Failure to adhere to the code is considered professional misconduct. There is an element of protection of the integrity of the profession implicitly imposed on the data scientist. Reflected in the wording of the IFLA code, librarianship (arguably) does not operate as a true and 'regulated' profession. There are no competency requirements to represent oneself as a librarian. Librarians and other information workers do not have an enforceable duty, nor can they be subject to sanctions or expulsion. (Although this could occur within specific employment contracts.)

With no enforcement authority, this reduces the IFLA code to persuasion and consensus building and aspirational rhetoric. For context, the world's oldest and largest library association, the American Library Association (ALA), developed a statement entitled Questions & Answers on Enforcement of the Code of Ethics. It states:

As a voluntary membership organization, ALA does not enforce the Code of Ethics for a variety of reasons. As a non-licensing professional society, the ALA would have two possible actions in response to a violation of the Code of Ethics: Suspend or expel a member from membership, or admonish or censure an individual or institution, publicly or privately. (American Library Association, 2009)

## **Discussion**

The International Centre for Information Ethics (n.d.) affirms the value of information ethics for information specialists, including:

...to be able to recognize and articulate ethical conflicts in the information field; to activate the sense of responsibility with regard to the consequences of individual and collective interactions in the information field; to improve the qualification for intercultural dialogue on the basis of the recognition of different kinds of information cultures and values; [and,] to provide basic knowledge about ethical theories and concepts and about their relevance in everyday information work.

Information ethics can be applied to different information professions, including librarianship, archives, data science, records management, journalism, and so on. Exploring information ethics within and across information fields helps information specialists sharpen their individual and collective awareness about power structures, ambiguities and intents with respect to the development of ethical conflicts (new and old) in information work. For members of IFLA, for example, to be encouraged to contextualize its 2012 code alongside emergent sister codes can foster the necessary proactive approach to professional development in librarianship and, perhaps most importantly, to its critical commitments within the broader landscapes and matrices of information societies and the individuals who interact with information and data in those societies. IFLA has a core audience defined by its membership, which cuts across a political spectrum. The implications of IFLA's permissive rhetoric transcend it in the expansive information and data landscape, including in the labour market where information rights and responsibilities come under both intramural and extramural scrutiny.

## **Conclusion**

People with an interest in the information professions should be careful not to reductively conflate terms, titles and professional commitments. Our rationale is informed by thinking of the traditional 'librarian' providing publicly available information to an arms-length client. This seemed to be the targeted audience for the IFLA code. A more expansive consideration of an information worker in a private setting may be more aligned with the data scientist.

While IFLA's Code of Ethics for Librarians and Other Information Workers (2012) is permissive, the DSA's Data Science Code of Professional Conduct (2013) is cautionary. Ideally the discussion

offered here will support the development, through an open task, of a more robust framework for library and information ethics and a more comprehensive and inclusive framework for thinking about and conceptualizing data ethics.

Prospective library and information students, information professionals and educators in the field and related fields should not conflate a data scientist's conduct framework with those of the librarians and other information workers. The implications of our analysis transcend an interest in data and extend into scholarship in the professions and labour studies. As well, implications of our findings have the potential to be infused into a critical contemporary global discourse of the knowledge economy and 'ways of knowing', currently heightened by post-truth realities, realities which increasingly indicate workplace speech and whistleblowing across industry sectors and fields need to be addressed. Analysis of codes of ethics alongside codes of conduct can benefit the endeavour. Ultimately a career can be made or lost in the critical decision to do or not to do (or say or share) something.

### *Future inquiry*

In 2013, the IGP Code of Ethics applicable to Information Governance Professionals (ARMA, 2013) was adopted by ARMA, replacing their 1992 code. Like the current IFLA code, the 1992 ARMA code was persuasive using language such as 'increasing the awareness of ethical concerns' and 'to guide . . . in the reflection, decision making, and action in two broad areas of ethical concern: society and the profession' and generically targeted to an undefined group (information and records management professionals) within the larger, but also undefined information profession (ARMA, 1992). The current code of ethics is much more directed in its application using the word 'shall' to direct IGP-certified individuals to adhere to the code as a condition of maintaining certification and includes the provision for investigation and sanctions where there is a suspected violation. Also notable in the updated code is the expansion of recipients to be considered in the professional's ethical decision realm to include the public, somewhat reflective of the 'public good' language found in the IFLA and 2018 ACM codes (to be discussed in the next paragraph).

More recently, the drafting evolution of the 2018 rewrite of the ACM Code of Ethics and Professional Conduct (2018), adopted in June 2018, is illustrative. The first draft was notable because of the addition of 'public good' as a primary ethical consideration in its preamble and within the code (ACM's Committee on Professional Ethics (ACM COPE), n.d.,a). By the

third draft, the 'public good' consideration was strengthened to 'computing professionals must always support the public good' (ACM COPE, n.d.,b) and moved to the first line of the preamble to provide emphasis to this 'highest principle and main purpose of the Code'(ACM COPE, n.d.,c). Other important changes as well bring it even closer into alignment with LIS-based documents. First, the scope has been widened to include 'all current and aspiring computing practitioners, instructors, influencers, and anyone who uses technology in a meaningful way' not strictly ACM members. (This mirrors librarianship, where there is no professional hurdle for members to be considered part of the profession, but digresses from the ARMA model which tightened up application to a professional membership group.) ACM members are to encourage adherence by all computing professionals and have a duty to take action. Second, imperatives have now become principles through the use of 'should' rather than 'must/shall/will' language, with the intent that there is room for judgement in decisions. (This highlights a code of conduct vs. a code of ethics and prescription vs. aspirational and again, digresses from the trajectory of the ARMA code changes.) Third, the legal focus has shifted to more of an ethically based focus for intellectual property rights. Furthermore, there is language that indicates there should not be unreasonable opposition of use of someone's own intellectual property for public good. (This underscores the paramount nature of public good considerations.) Monitoring the ethos of this rhetoric is valuable for imagining future inquiry lines around both data diffusion and the building of barriers to data. Such inquiry lines inevitably hinge on the nature of property rights in society (e.g. democratic, oligarchic). Any international rhetoric, like that of IFLA, demands diverse comparisons.

### **Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### **Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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### Appendix I

Table 2 provides a side-by-side comparison of the 2012 IFLA Code of Ethics for Librarians and Other Information Workers presented, in its entirety, with the 2013 Data Science Association Code of Professional Conduct Code slotted in where appropriate.

**Table 2.** IFLA Code of Ethics vs. DSA Code of Conduct.

International Federation of Library Associations and Institutions (IFLA) Code of Ethics for Librarians and Other Information Workers 2012 Preamble	Data Science Association (DSA) Data Science Code of Professional Conduct 2013
<p>This Code of Ethics and Professional Conduct is offered as a series of ethical propositions for the guidance of individual librarians as well as other information workers, and for the consideration of Library and Information Associations when creating or revising their own codes.</p> <p>The function of codes of ethics can be described as</p> <ul style="list-style-type: none"> <li>● encouraging reflection on principles on which librarians and other information workers can form policies and handle dilemmas</li> <li>● improving professional self-awareness</li> <li>● providing transparency to users and society in general.</li> </ul> <p>This code is not intended to replace existing codes or to remove the obligation on professional associations to develop their own codes through a process of research, consultation and cooperative drafting. Full compliance with this code is not expected.</p> <p><b>This code is offered in the belief that:</b></p> <p>Librarianship is, in its very essence, an ethical activity embodying a value-rich approach to professional work with information.</p> <p>The need to share ideas and information has grown more important with the increasing complexity of society in recent centuries and this provides a rationale for libraries and the practice of librarianship.</p> <p>The role of information institutions and professionals, including libraries and librarians, in modern society is to support the optimisation of the recording and representation of information and to provide access to it. Information service in the interest of social, cultural and economic well-being is at the heart of librarianship and therefore librarians have social responsibility.</p> <p>Furthermore, this belief in the human necessity of sharing information and ideas implies the recognition of information rights. The idea of human rights, particularly as expressed in the United Nations Universal Declaration of Human Rights (1948), requires us all to recognise and acknowledge the humanity of others and to respect their rights. In particular, Article 19 sets out rights of freedom of opinion, expression and access to information for all human beings.</p> <p>Article 19 expressly sets out a right to 'Seek, receive and impart information and ideas in any media and regardless of frontiers' which provides a clear rationale for libraries and the practice of modern and progressive librarianship. IFLA in statements, manifestos and policy and technical documents too</p>	<p>Rule 9 - It is professional misconduct for a data scientist to knowingly:</p> <p>(a) violate or attempt to violate the Data Science Code of Professional Conduct, knowingly assist or induce another to do so, or do so through the acts of another;</p>

(continued)

**Table 2.** (continued)

<p>numerous to list has expanded the understanding of work with information. Implicit in this work is the idea of information rights and their significance for the profession and society generally. The emphasis on information rights in turn obliges librarians and other information workers to develop a principled critique of relevant law and to be prepared to advise and, if appropriate, advocate the improvement of both the substance and administration of laws.</p> <p>The clauses of this code of ethics build on the core principles outlined in this preamble to provide a set of suggestions on the conduct of professionals. IFLA recognises that whilst these core principles should remain at the heart of any such code, the specifics of codes will necessarily vary according to the particular society, community of practice or virtual community. Code making is an essential function of a professional association, just as ethical reflection is a necessity for all professionals. IFLA recommends the Code of Ethics for IFLA to all its member associations and institutions and to individual librarians and information workers for these purposes.</p> <p>IFLA undertakes to revise this code whenever appropriate.</p>	
<p>I. Access to information</p>	
<p>The <u>core mission</u> of librarians and other information workers is to ensure access to information for all for personal development, education, cultural enrichment, leisure, economic activity and informed participation in and enhancement of democracy.</p>	<p>Rule 8 - Data Science Evidence, Quality of Data and Quality of Evidence</p> <p>(a) A data scientist shall inform the client of all data science results and material facts known to the data scientist that will enable the client to make informed decisions, whether or not the data science evidence are adverse.</p>
<p>Librarians and other information workers reject the denial and restriction of access to information and ideas most particularly through <u> censorship </u> whether by states, governments, or religious or civil society institutions.</p>	
<p>Librarians and other information workers offering services to the public should make every endeavour to offer access to their collections and services <u> free of cost </u> to the user. If membership fees and administrative charges are inevitable, they should be kept as low as possible, and practical solutions found so that socially disadvantaged people are not excluded.</p>	
<p>Librarians and other information workers <u> promote and publicise </u> their collection and services so that users and prospective users are aware of their existence and availability.</p>	
<p>Librarians and other information workers use the most effective ways to make the material <u> accessible to all </u>. For this purpose they seek to ensure that the websites of libraries and other information institutions comply with international standards for accessibility and access to them is not subject to barriers.</p>	

(continued)

**Table 2.** (continued)**2. Responsibilities towards individuals and society**

In order to promote inclusion and eradicate discrimination, librarians and other information workers ensure that the right of accessing information is not denied and that equitable services are provided for everyone whatever their age, citizenship, political belief, physical or mental ability, gender identity, heritage, education, income, immigration and asylum-seeking status, marital status, origin, race, religion or sexual orientation.

Librarians and other information workers respect language minorities of a country and their right to access information in their own language.

Librarians and other information workers organize and present content in a way that allows an autonomous user to find the information s/he needs. Librarians and other information workers help and support users in their information searching.

Librarians and other information workers offer services to increase reading skills. They promote information literacy including the ability to identify, locate, evaluate, organize and create, use and communicate information. And they promote the ethical use of information thereby helping to eliminate plagiarism and other forms of misuse of information.

**Rule 8 - Data Science Evidence, Quality of Data and Quality of Evidence**

- (a) A data scientist shall inform the client of all data science results and material facts known to the data scientist that will enable the client to make informed decisions, whether or not the data science evidence are adverse.
- (b) A data scientist shall rate the quality of data and disclose such rating to client to enable client to make informed decisions. The data scientist understands that bad or uncertain data quality may compromise data science professional practice and may communicate a false reality or promote an illusion of understanding. The data scientist shall take reasonable measures to protect the client from relying and making decisions based on bad or uncertain data quality.
- (c) A data scientist shall rate the quality of evidence and disclose such rating to client to enable client to make informed decisions. The data scientist understands that evidence may be weak or strong or uncertain and shall take reasonable measures to protect the client from relying and making decisions based on weak or uncertain evidence. [Librarian does not evaluate quality of info, but may evaluate source of info]
- (d) If a data scientist reasonably believes a client is misusing data science to communicate a false reality or promote an illusion of understanding, the data scientist shall take reasonable remedial measures, including disclosure to the client, and including, if necessary, disclosure to the proper authorities. The data scientist shall take reasonable measures to persuade the client to use data science appropriately.

*(continued)*

**Table 2.** (continued)

	<p>[related to information literacy – although perhaps not of the type envisioned in the IFLA code]</p> <p>Rule 8 - Data Science Evidence, Quality of Data and Quality of Evidence</p> <p>(n) A data scientist shall use reasonable diligence to detect, recognize, disclose and factor real, perceived and potentially hidden risks in using data science. The prudent data scientist understands that data creators and the designers and builders of data management systems have more knowledge than the data scientist and can hide risks in the foundations and interpretations / bias of the raw, created and manipulated data. The data scientist shall take reasonable remedial measures, including disclosure of risks to the client. [related to information literacy]</p>
<p>Librarians and other information workers respect the protection of <u>minors</u> while ensuring this does not impact on the information rights of adults.</p> <p>3. Privacy, secrecy and transparency</p> <p>Librarians and other information workers respect <u>personal privacy</u>, and the protection of personal data, necessarily shared between individuals and institutions.</p>	<p>Rule 5(d) A data scientist shall not reveal information relating to the representation of a client unless the client gives informed consent, the disclosure is impliedly authorized in order to carry out the representation or the disclosure is permitted by paragraph (e).</p> <p>Rule 5(f)(3) Communicating confidential information only to client employees and authorized agents (such as attorneys or external auditors) who have a legitimate business reason to know the information.</p>
<p>The relationship between the library and the user is one of <u>confidentiality</u> and librarians and other information workers will take appropriate measures to ensure that user data is not shared beyond the original transaction.</p>	<p>Rule 5(a) Confidential information is information that the data scientist creates, develops, receives, uses or learns in the course of employment as a data scientist for a client, either working directly in-house as an employee of an organization or as an independent professional. It includes information that is not generally known by the public about the client, including client affiliates, employees, customers or other parties with whom the client has a relationship and who have an expectation of confidentiality. The data scientist has a professional duty to protect all confidential information, regardless of its form or format, from the time of its creation or receipt until its authorized disposal. [DSA clause broader than IFLA in that it refers to the information content; IFLA focused on information about the user]</p> <p>Rule 5(h) <i>A data scientist shall protect client confidential information after termination of work for the client.</i></p> <p>Rule 5(i) A data scientist shall return any and all confidential information in possession or control upon termination of the data scientist-client relationship and, if requested, execute an affidavit affirming compliance with obligations relating to confidential information.</p> <p>Rule 7(b) Even when no client-data scientist relationship ensues, a data scientist who has learned information from a prospective client shall not use or reveal that information.</p>
<p>Librarians and other information workers support and participate in <u>transparency</u> so that the workings of</p>	

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<p>government, administration and business are opened to the scrutiny of the general public. They also recognise that it is in the public interest that misconduct, corruption and crime be exposed by what constitute breaches of confidentiality by so-called 'whistleblowers'.</p> <p>4. Open access and intellectual property          Librarians and other information workers' interest is to provide the best possible access for library users to information and ideas in any media or format. This includes support for the principles of <u>open access</u>, <u>open source</u>, and <u>open licenses</u>.</p> <p>Librarians and other information workers aim to provide fair, swift, <u>economical and effective access</u> to information for users.</p> <p>Librarians and other information workers have a professional duty to advocate for exceptions and limitations to <u>copyright</u> restrictions for libraries.</p> <p>Librarians and other information workers are partners of authors, publishers and other creators of copyright protected works. Librarians and other information workers recognise the <u>intellectual property right</u> of authors and other creators and will seek to ensure that their rights are respected.</p> <p>Librarians and other information workers negotiate the most favourable terms for access to works on behalf of their users and seek to ensure that access is not unnecessarily prevented or hindered by the mode of administration of intellectual property laws and that licenses do not override exceptions for libraries contained in national legislation. Librarians and other information workers encourage governments to establish an intellectual property regime that appropriately respects balance between the interests of rightsholders and individuals and the institutions such as libraries which serve them.</p> <p>Librarians and other information workers also advocate that copyright terms should be limited and that information that has fallen in the <u>public domain</u> remains public and free.</p> <p>5. Neutrality, personal integrity and professional skills          Librarians and other information workers are strictly committed to <u>neutrality and an unbiased stance</u> regarding collection, access and service. Neutrality results in the most balanced collection and the most balanced access to information achievable.</p> <p>Librarians and other information workers define and publish their policies for selection, organization, preservation, provision, and dissemination of information.</p> <p>Librarians and other information workers distinguish between their <u>personal convictions and professional</u></p>	<p>Rule 3(b) A data scientist shall not counsel a client to engage, or assist a client, in conduct that the data scientist knows is criminal or fraudulent, but a data scientist may discuss the consequences of any proposed course of conduct with a client and may counsel or assist a client to make a good faith effort to determine the validity, scope, meaning or application of the data science provided. [DSA provision has much wider application than this specific instance in IFLA]</p>
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**Table 2.** (continued)

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<p><u>duties</u>. They do not advance private interests or personal beliefs at the expense of <u>neutrality</u>.</p> <p>Librarians and other information workers have the right to <u>free speech</u> in the workplace provided it does not infringe the principle of <u>neutrality</u> towards users.</p> <p>Librarians and other information workers <u>counter corruption</u> directly affecting librarianship, as in the sourcing and supply of library materials, appointments to library posts and administration of library contracts and finances.</p> <p>Librarians and other information workers strive for excellence in the profession by <u>maintaining and enhancing their knowledge and skills</u>. They aim at the highest standards of service quality and thus promote the positive reputation of the profession.</p> <p>6. Colleague and employer/employee relationship</p> <p>Librarians and other information workers treat each other with <u>fairness and respect</u>.</p> <p>Librarians and other information workers <u>oppose discrimination</u> in any aspect of <u>employment</u> because of age, citizenship, political belief, physical or mental ability, gender, marital status, origin, race, religion or sexual orientation.</p> <p>Librarians and other information workers promote <u>equal payment</u> and benefits for men and women holding comparable jobs.</p> <p>Librarians and other information workers share their professional experience with colleagues and they help and guide new professionals to enter the professional community and develop their skills. They contribute to the activities of their professional association and participate in research and publication on professional matters.</p> <p>Librarians and other information workers strive to earn a reputation and status based on their <u>professionalism and ethical behaviour</u>. They do not compete with colleagues by the use of unfair methods.</p>	<p>Rule 2 - Competence</p> <p>A data scientist shall provide competent data science professional services to a client. Competent data science professional services requires the knowledge, skill, thoroughness and preparation reasonably necessary for the services.</p>
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# The literate environment in Kenya: Re-conceptualizing the value of text

International Federation of  
Library Associations and Institutions  
2019, Vol. 45(4) 302–308  
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DOI: 10.1177/0340035219845012  
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## Abstract

Understanding how a society values reading beyond the educational setting is currently described in terms of a reading culture. Shifting the focus from a reading culture to a literate environment, which comprises all the ways people interact with text in their everyday lives, is an alternative way to capture the value of the written word. This study examines the extent to which a literate environment, to include a reading culture, exists in Kenya. The data was drawn from an exploratory study of the information practices of women attending university in Kenya. Findings show that a literate environment existed and extended beyond campus. Although not widely generalizable, evidence of a reading culture was also apparent. This case demonstrates how assessing the literate environment provides a broader understanding of how people engage with text that would otherwise be missed. A broader concept will lead to better strategies to enhance engagement with text.

## Keywords

Information practice, Kenya, literate environment, reading culture

Submitted: 7 November 2018; Accepted: 28 March 2019.

## Introduction

Traditionally, the value a society places on reading beyond the educational setting is evaluated by measuring the extent to which a reading culture exists. This paper suggests that understanding how much a society values text is better measured using the concept of a literate environment, or an environment in which text pervades everyday life. The goal is not to diminish the importance of reading books for leisure, which is a component of the literate environment. The goal is to promote a broader framework to measure all the ways people engage with the written word.

## Literature review

### *The status of a reading culture in Kenya*

A reading culture is an environment in which a shared practice of reading for pleasure or leisure exists and is valued. Reading for leisure is “voluntary reading, spare time reading, recreational reading, independent reading, reading outside of school, and self-selected reading” (Hughes-Hassell and Rodge, 2007: 22). While a baseline for the status of a reading culture in Kenya has not been established, the popular

consensus claims that a reading culture has yet to emerge in Kenya. While reading cultures are still developing in many African nations, the case of Kenya is interesting because such a high value is placed on education, and the overall literacy rate is among the highest in East Africa. Mbae (2002) questions this peculiarity, asking:

Why do so many Kenyans shy away from reading books and thus deny themselves a chance to gain a true education? In a country that is well known for its passion and obsession with the education of children, why are so many people, including university graduates, indifferent to the one key that opens the doors to true education? Why is reading considered a “foreign culture” in a continent which was among the earliest to employ the art of writing and reading (in countries like Egypt and Ethiopia) and which is reputed to have produced some of the greatest philosophers and theologians (such as St Augustine) that walked the face of the earth? How is it

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that Kenya has not developed a reading culture even though it is reputed to be one of the countries with a highly “educated” populace in Eastern Africa.

Statistics support Kenya’s commitment to and achievement of a high level of education. More Kenyans are enrolled in tertiary education than in any other East African country, and, due to concerted government efforts, the number tripled from 2009 to 2016 (UNESCO Institute for Statistics, 2019a, 2019b, 2019c, 2019d, 2019e). Furthermore, according to the same reports, they spend just over 5% of their GDP on education and 15% of their overall government expenditure, which is more than other East African countries. The literacy rate of adults 15 years of age and older is 78%, which is a higher literacy rate than observed in other East African countries. Considering the number of Kenyans who are literate and the emphasis on education, Mbae’s question about why a reading culture has not developed is sound.

Among the reasons scholars have offered for why a reading culture has yet to emerge in Kenya is that reading has always been associated with passing standardized tests. Students practice reading and writing in the classroom, and they are not likely to want to read for pleasure when this stressful practice has been completed. In a study involving Kenyan elementary students, Ingule (1983) also found that students valued reading for its usefulness in passing standardized exams. A national decrease in the number of standardized tests might have altered this mentality. After interviewing several educators, Oyaro (2005) learned that the reduction of examinable subjects in primary school has resulted in more time for children to read books. Furthermore, he reasoned that a reading culture was emerging, perhaps linked to fewer standardized tests but also partly due to targeted efforts by the Kenya National Library Services (KNLS) to develop reading programs that expose more children to reading for pleasure. KNLS designed the programs to be exciting, in which students read outside or tell each other stories based on the readings to allow more expression. One of these innovative programs is the East African children’s Reading Tent Project, which Krolak (2005) claimed has increased reading for pleasure among Kenyan children in rural areas. While additional research on the effectiveness of this program in promoting a reading culture is unavailable, the KNLS, in collaboration with other organizations such as the National Book Development Council, continues to run Community Reading Tents in order to promote a reading habit (KNLS, 2017; Otike, 2011).

Otike (2011) attributed the slow growth of a reading culture to how reading policy is enforced.

Currently, promotion of a reading culture falls under the purview of KNLS, rather than the education system which focuses on literacy and reading comprehension. For example, KNLS’s first strategic objective is to improve the reading culture among Kenyans, an objective they will be able to measure once they establish the baseline (KNLS, n.d.). While the education system’s primary focus is on passing tests, KNLS’s focus is on developing lifelong learners and readers. This separation of lifelong learning from education may be reinforcing the stereotype that reading for pleasure is not as valuable or useful as reading to pass tests.

Another factor that has been frequently noted is that reading in Kenya has not been fully separated from the colonial influence, to include Christianity. Prior to colonization, an oral culture dominated in which storytelling and singing were the primary forms of communicating knowledge. People also expressed themselves through dancing and various instrumentation. These oral and visual traditions still exist today and are important ways of passing on various types of knowledge. When the British colonizers introduced reading and writing into formal education in Kenya, the primary objective was to train Kenyans for various vocations and, especially, to indoctrinate Christian religious values through the reading of religious texts. Because of this, Chakava (1982) suggested that reading and religion, specifically Christianity, are intertwined. In fact, Chakava claimed the first book and book publisher in Kenya were both religion based.

Lack of relevant or appropriate literature is another possible reason that a reading culture is not widespread. Krolak (2005: 11) explained that, “as most libraries in poorer countries cannot afford to buy only appropriate books in the appropriate language, they rely on foreign book donations or simply do not have enough relevant titles in the local language.” This is a significant consideration for Kenyan schools and libraries. Ngumo (2003) also claimed that not having books in local languages has been a factor, as well as having access to books other than textbooks and prioritizing reading books other than textbooks at school and at home. When books are available in local languages, the content often fails to capture relevant cultural practices (Commeyras and Inyega, 2007).

Finally, teachers and parents can play additional roles in encouraging a reading culture. Based on a survey of teacher and parent roles in improving a reading culture in Kenya, Ronald et al. (2014) found that lack of student motivation, including lack of motivation from teachers and parents, was the number one causal factor of why students did not read beyond

what was required for examinations. The second factor was lack of parental guidance and encouragement. Other studies also show that the attitude of reading adopted in the home impacts children's attitudes about the value of reading (Baker and Scher, 2002; Strommen and Mates, 2004). Otike (2011) suggested that parents should encourage their children, and they should even take on a cost-sharing role by supplementing schools with additional reading material. When students see their parents and teachers taking an active role in establishing a reading habit or reading for pleasure, they are more likely to adopt the behavior than if teachers only encourage reading for tests and parents disengage from the process.

### *The status of a literate environment in Kenya*

A reading culture is not the only way to measure the role that reading plays in a society's everyday life. Krolak (2005: 3) described a framework similar to a reading culture that she calls a literate environment:

Dynamic and stimulating literate environments at home, in the classroom, in the workplace and in the community are essential to literacy acquisition, development and lifelong use. In many countries, people cannot imagine daily life without written information. They start the day reading the newspaper, they pass many posters and advertisements on the way to work or while running errands, they read and write e-mails and reports at work, they look through the daily mail and enjoy an interesting magazine or a good book in the evening.

A literate environment is different from a reading culture in that a literate environment includes the multitude of ways people interact with text in their everyday lives, not just reading books for pleasure. Reading books for leisure is desirable, but exploring all the ways individuals engage with the written text provides a better understanding of the value placed on literacy and text.

One reasonable assumption is that people who do not read books for pleasure might read other types of text-based media in their leisure time. In an exploration of why Kenyan youth accounted for only 20% of newspaper and magazine readership, journalist Kahongeh (2018) asked several young people about their reading habits. One interviewee, who actually claimed to read books in her spare time, opined why many of her peers do not do the same: "Social media has disrupted everything. Young people spend most of their time online catching up on memes, breaking news and gossip, all of which are of less intellectual value compared to reading." Interestingly, she is not describing a habit devoid of reading but one that

actually exemplifies a literate environment. In other words, her peers are reading for pleasure; most of them are just not reading traditional print books. In a study of Kenyan teachers, Ngugi and Mberia (2014) claimed that reading habits are changing as more people are Internet surfing, and while people might be accessing information or chatting on Facebook, time spent online is still part of a reading culture. If not a reading culture, these reading habits would certainly qualify as exemplifying a literate environment.

### *Exploring a broader view of engaging with text: The literate environment*

The case study presented in this paper uses data collected from a larger, exploratory study on the information practices of women enrolled at a university in Nairobi, Kenya. This data is used to examine to what extent a literate environment and reading culture existed. Based on the literature review, a literate environment is more likely to be present than a traditional reading culture, but a reading culture might also exist among women who have committed to a higher level of education than what is required or expected of most Kenyans. In either case, the traditional concept of a reading culture will not likely capture all the meaningful ways in which people interact with text.

### **Methodology and data collection**

This study used data drawn from a larger, qualitative study that used hermeneutic phenomenological analysis to explore women's information practices, which Savolainen (2007) defines as the set of recurrent information seeking, searching, use, evaluation, production, and sharing activities of a particular group or community. The first objective of that study was to find out what types of information women found relevant in their everyday lives in their many social roles. The second goal was to find out how these objects gained legitimacy as informative. The sample was limited to university students because understanding the institutionalized role of being a student could provide insight about shared information behaviors that were distinct from the information behaviors that emerged in other social roles. Furthermore, the study was limited to women in order to control for gender when examining how other types of social roles (e.g. familial, religious) might affect information practices.

I asked the group of 20 women to photograph events or occurrences that they saw as personally relevant or informative to their everyday life. Each photograph served as an anchor or signpost of the relevant object that could be repeatedly shared. Then,

we met as a group once a week for six weeks to discuss the meaning of their photographs. Students were all from the same university, an aspect that made it easier to facilitate weekly meetings and helped establish familiarity among group members when sharing about personal issues. The discussion of the photographs focused on how the participant experienced the object and why the object was relevant. This discussion was transcribed and analyzed using Hycner's (1985) 15-step hermeneutic phenomenological method, which helped to uncover themes.

The group collected a total of 162 images. While the primary purpose of this study was to identify specific information practices, a simple observation was that many photos included text – some of which was central to the phenomenon or theme being described by the participant, and some of which was simply present in the environment photographed. Of the images presented, 69 contained textual information. The number of images containing textual information demonstrates one measurable aspect of a literate environment, or how much text occurs in the physical environment in everyday situations. The phenomenological themes uncovered during analysis helped provide additional context and meaning for these photographs such as how they interacted with the textual object or their perception of the object.

## Relevant findings and discussion

### *A reading culture*

Findings show that women read in their leisure time, although not all of them read books. For example, they read magazines for artistic inspiration and fashion tips. Another woman read comics online, and many women browsed and searched the Internet for various items, such as recipes or news. These findings support what Oyaro (2005) suggested, that a reading culture has been growing, even if slowly. Importantly, the observation of reading for pleasure included both print and non-print sources, including information and communication technologies (ICT).

### *A literate environment*

Aside from reading books, magazines, and the Internet for leisure, women were clearly surrounded by a text-rich environment equivalent to what Krolak (2005) identified as a literate environment. This environment included beauty product labels, posters, CD and DVD covers, political posters, development posters, slogans on *matatus* (privately-owned public transportation vans that are often decorated elaborately), advertisements, quotes, and newspaper

clippings. This environment was not just limited to campus but extended to the urban centers and into rural areas. They used their mobile phones to text, and they used smart phones and computers to do a range of text-based activities including texting, emailing, accessing Facebook, and engaging in a range of information-seeking activities.

To some extent, women discovered information about their African and Kenyan identities from their textbooks and other text-based resources. While some of this was part of their education in the classroom or as part of an extra-curricular activity, some text-based resources were part of leisurely Internet browsing or writing on other types of artifacts, including tribal objects or CDs. This is relevant to understanding how social identity and practices are transferred among people. Many times, social identities are learned through social practices and lived experiences. Findings from this research show that women are also reading about what these social identities entail. Importantly, this activity would be captured if studying a literate environment, but would be missed if limited to studying a reading culture.

### *Reading for educational and religious purposes in a literate environment*

While the focus of this paper is on a reading culture and a literate environment, the findings also supports what a significant portion of the literature suggests – that Kenyans associate reading with education and religion. Libraries and textbooks were symbols of knowledge and education. Students “of course” got information from the library, which had “all the knowledge you need.” The library was the center of academic and university life on campus. Honorable guests and graduation ceremonies were hosted at the library, and students spoke very highly of the symbolic status of the building. This was consistent with what the literature conveyed about the value placed on being literate, while not captured by the idea of a reading culture. Multiple students showed a high value for reading itself. One participant said:

Those are my books . . . Books are full of knowledge, that's why we get them. We learn so much from them, things we didn't know. So, right now, I'm doing classes that are teaching me about my own country which I didn't know at all. And, I'm gaining new knowledge and loving it.

Additionally, women's images of religion and church were tied to the written word. These findings support Chakava's (1982) claim that reading and religion are connected. In addition to photographs of the

Bible, text-based resources about religion included inscriptions on the walls in church and CD albums. This finding also supports the richness of the literate environment and ways in which participants found themselves surrounded by text.

### *Significance of ICT in promoting a literate environment*

The value of ICT in promoting a literate environment and a reading culture cannot be overemphasized. In this study, women used computers and mobile phones for academic and personal purposes. They accessed websites for classes and used the computer to complete assignments. They also used the Internet for entertainment (to include books, music, and videos), to communicate via email or Facebook, and to access news online.

While students used ICT for a wide variety of reasons, how computers foster, or might foster, a reading culture in Kenya does not appear to have been widely addressed in the literature. Makenzi et al. (2003) found that the introduction of ICT in a Reading Tent Project in Njoro, Kenya, did improve students' overall reading habits. Ngugi and Mberia (2014) also found that ICTs affected reading habits and even claimed that some types of Internet usage can be considered evidence of a reading culture. In Uganda, a study of university students showed that both school purpose and other general reading habits significantly had improved since students started using ICT (Mlay et al., 2014). Research on literate environments and reading cultures would benefit from more studies focused on the use of ICT in the Kenyan context.

The notion computers have replaced books was espoused, but the belief was not confirmed by participants' actual behaviors. In other words, women used both for a range of activities, sometimes overlapping, but not always. For example, women used printed material primarily for education and religion, and this included textbooks and biblical texts, such as the Bible. Women also used printed material such as magazines for leisure reading. In contrast, the Internet was used for a wide variety of purposes and seen as something "everyone uses." Primarily, the Internet was used for leisure activities, but women used it for educational purposes, as well, including Blackboard and accessing websites for instructional purposes. They did not mention using e-textbooks, and the use of the Internet for religious purposes was not observed. One reason for this might be reading preferences regarding format. For example, a person might want to only read a textbook or religious text in print rather than online because of the length of

time usually spent reading such material. Someone might prefer websites for recipes or news because of the variety of material available and efficiency of searching. Future studies on users' information needs and preferences in Kenya are needed.

### **Conclusion**

The value of text in these women's everyday lives was obvious. In Nairobi, they lived in a literate environment where reading beyond the educational setting was common. This environment extended into their lives beyond the city and into rural areas, as their photographs demonstrated. They were surrounded by text – slogans on *matatus* and bins, magazine ads and graphics, email and phone texts, the news, inspirational and pop culture posters, and political posters. They used the Internet for a range of professional and personal tasks. In some cases, these women even read books – both printed and electronic – for pleasure.

### *The important shift to measuring a literate environment*

Focusing solely on a reading culture would not capture the importance of text in these women's everyday lives. Directing attention from a traditional reading culture to a literate environment would generate a multi-faceted perspective on the value Kenyans place on text and literacy. Promoting and measuring a literate environment would include reading books for pleasure and would also include other ways Kenyans engage with text for pleasure, including reading magazines, browsing websites, or reading posts on social media. More importantly, it would capture all the ways in which individuals surround themselves with or find themselves surrounded by text that would be missed if only examining a reading culture.

### *The value of ICT to a literate environment*

Measuring the literate environment should also include how ICT contributes to the prevalence and value of text. While some researchers have focused on the relationship between ICT and a reading culture (Makenzi et al., 2003; Ngugi and Mberia, 2014), this area has remained largely underexplored, yet could improve understanding about the extent of a literate environment, and even a reading culture, in Kenya. One barrier to overcome will be the stigma that online activity is in natural opposition to a reading culture; however, if people are engaging in online activity in their leisure time that requires literacy, then they are valuing text beyond the educational setting, and

perhaps even reading for leisure. Still, an important assumption not to make is that content is easily interchangeable. People might have format preferences that correspond with the purpose for which they are engaging with text. More research needs to be done on users' information needs and preferences.

### Reading culture as a subset of a literate environment

The goal is not to diminish the relevancy of a traditional reading culture. Rather, the goal is to understand all the ways people engage with text so that efforts to increase and improve interactions with text, and even promote a reading culture, are most effective. Conceptualizing a reading culture as a subset of a literate environment allows an opportunity to measure both, providing a robust framework to measure such engagement and, importantly, provide better data on which to base strategic efforts to enhance different types of engagement.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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# Knowledge management practice in South Asian higher education institutions

International Federation of Library Associations and Institutions  
2019, Vol. 45(4) 309–321  
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DOI: 10.1177/0340035219876958  
journals.sagepub.com/home/iff



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## Abstract

The investigation reported in this paper intended to explore the research on knowledge management in higher educational institutions in South Asian countries. A systematic literature review was conducted to identify, select and retrieve relevant scholarly literature, by following a detailed protocol and a systematic data extraction strategy. The findings of the study showed that limited research on knowledge management in the context of higher educational institutions was conducted in both theoretical aspects and practical implementations, denoting an imperative to conduct more research in this area. The findings also disclosed that multiple factors affect the knowledge management practices among primary higher educational institution agents: faculty, administrative staff, and information professionals. As the result of the analysis of the literature review findings, a conceptual framework is proposed, which is expected to provide a good foundation for future research as well as pave the way towards more successful knowledge management implementations in the higher educational institutions in South Asia and beyond.

## Keywords

Higher educational institutions, knowledge management, South Asia, systematic literature review

Submitted: 6 June 2018; Accepted: 25 June 2019.

## Introduction

Higher education (HE) has been acknowledged as an essential driver to create and disseminate knowledge through research; provide educational service to surrounding communities; and assist society in cultural, social and economic development (Khorasgani, 2008). The HE sector has grown very significantly in terms of research, teaching and learning in the last two decades in South Asian countries (Marginson, 2011). In the region, HE is greatly influenced by countries' historical past and nation-building efforts, as well as techno-economic global trends. In countries such as Afghanistan, Bangladesh, India, Nepal, Pakistan and Sri Lanka, the HE sector is structured in a

similar fashion where apex regulatory bodies, University Grants Commissions (e.g. India) or Higher Education Commissions (e.g. Pakistan) play a key role as regulators, policy advisers and licensees for higher educational institutions (HEIs) (Intelligence Unit, The Economist, 2013).

Contemporary HEIs of the world recognize their valuable intelligence and have adopted their changing

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role in society (Laal, 2011) by devising policies for the effective management of their knowledge assets (Toro and Joshi, 2013). Therefore, knowledge is considered as one of the critical elements (Gill, 2009), that through its effective sharing and utilization (King, 2009), enables HEIs to become competitive, innovative and sustainable (Poonkothai, 2016). Moreover, globalization, competition and contemporary technological infrastructure have had strong impact on the management practices of HEIs (Gill, 2009). Consequently, the management and sharing of knowledge have increasingly been considered essential for the growth of HEIs (Areekkuzhiyil, 2016) and have raised the need to implement knowledge management (KM) strategies and infrastructures in these institutions (Toro and Joshi, 2013).

Knowledge is a mixture of experiences, values, contextual information and expert insights that provides a framework for evaluating and incorporating new experiences and information (Davenport and Prusak, 1998). KM is defined as 'the effective learning processes associated with exploration, exploitation and sharing of human knowledge (tacit and explicit) that use appropriate technology and cultural environments to enhance an organization's intellectual capital and performance' (Jashapara, 2004: 12). KM in organizations has remained a well-discussed topic since Nonaka (1994) proposed his dynamic theory of organizational knowledge creation. In his work, he furthered the work of Polanyi (1966) and elaborated explicit and tacit knowledge. He mentioned that explicit knowledge is transmittable in formal systematic language. In contrast, tacit knowledge is hard to formalize and communicate because it is deeply rooted in action, commitment and involvement in a specific context (Nonaka, 1994). Individuals construct tacit knowledge during their professional activities and experiences at the workplace (Nunes et al., 2006).

In organizations, knowledge is available in multiple formats such as printed documents, best practices, learning about best ways to do jobs, intelligence embedded in the organization's products, processes and relationships (King, 2009). KM facilitates all the knowledge-related activities like knowledge creation, capture, transformation and use within an organization among individuals and groups (Bhatt, 2000). The core value of KM is to manage personal expertise and make it widely available as an organizational resource (Newell et al., 2009).

Similarly, like business organizations, HEIs as knowledge-based environments create, manage and disseminate knowledge within and outside of their boundaries (Gera, 2012; Othman and Skaik, 2014).

In HEIs, knowledge is generated through multiple human activities such as the processes of teaching, examination, evaluation, admissions, counselling, training, research, consultancy and management of activities (Dhamdhere, 2015; Ranjan and Khalil, 2007). The knowledge can be in different forms like facts, opinions, ideas, theories, principles, models, experiences, values, contextual information, and faculties and staff insights (Adhikari, 2010). From a holistic perspective, knowledge in HEIs can be differentiated between academic and organizational knowledge (Coukos-Semmel, 2003). For the success of HE, it is important that the knowledge created, stored and shared by each of the agents contributes to the effectiveness of an entire system (Rowley, 2000).

From the HEIs perspective, KM is explained as a set of practices that help an institution to improve teaching, research and administrative roles and encourage the concerned stakeholders to use and share data and information in decision making (Petrides and Nodine, 2003). In practice, it can be seen that HEIs create knowledge during their academic and administrative processes and are trying to make policies to manage tacit and explicit knowledge to improve knowledge sharing (KS) and effective decision making within institution (Kumar, 2015). Therefore, in order to get maximum benefits from the knowledge assets, the HEIs' administrators are required to understand the importance of intellectual capital and its management (Coukos-Semmel, 2003).

From the HE perspective, the study by Hawkins (2000) claimed that in the past, KM was considered as a function performed by librarians only. And this was a reductionist view that not only disregards tacit knowledge but also assumes that all knowledge created in HE is stored in an academic library. According to Masa'deh et al. (2017: 2), 'KM gained more importance as a topic worth researching due to the potential role in contributing to the success of organizations in general and HEIs in particular'. Toro and Joshi (2013) also emphasized that there is a need to review old paradigms, and explore new KM players in academia, so that new KM frameworks can be explored and proposed.

In the developing world, KM research is positioned at an emerging stage (Asrar-ul-Haq and Anwar, 2016). Many authors have pin-pointed that the HEIs located in South Asian region, e.g. Bangladesh, India and Pakistan, are facing several issues for managing their physical and knowledge-based assets (Haider, 2008). The institutions in the region are trying to make policies and encouraging the concerned stakeholders to take an active part in minimizing the barriers and promoting successful KM practices (Abass

et al., 2011; Bhusry and Ranjan, 2011b; Dhamdhare, 2015; Islam et al., 2014, 2015; Ranjan and Khalil, 2007; Shreemali and Rathore, 2011). Considering the growing trend of the importance of KM in the HEIs of the region, this study aims to undertake a systematic literature review (SLR) of literature, describing the importance of knowledge as a sustainable competitive advantage in the academic world in South Asia, and organizing the research identified and found relevant into a framework that may be useful to boost South Asian HE organizations in the contemporary global society.

## Research objectives

According to the stated aim, the research reported in this paper intended to achieve the following three objectives:

1. Explore the trend of KM research in the HEIs of the South Asia region;
2. Explore the locus and focus of KM research in the HEIs in the region, and;
3. Explore the factors that have an impact on KM practices in the HEIs of the region.

## Methodology and design

The research was conducted by following the SLR general strategy proposed by Nunes et al. (2009) and the specific protocol suggested by Jesson et al. (2011). The approach adopted consists of the following steps:

1. identification of keywords;
2. production of search queries;
3. definition of inclusion and exclusion criteria;
4. identification of relevant databases;
5. the query for databases and selection of relevant documents, and;
6. analysis of the dataset selected.

### Identification of keywords and production of search queries

As the focus of this review was to explore KM research in the HEIs, so four keywords were selected: (1) knowledge management, (2) knowledge sharing, (3) tacit knowledge, and (4) explicit knowledge. To these keywords, South Asian-specific keywords were added to create search strings (Figure 1). After this, a structured search was carried out in the generally used and well-established databases, namely, Web of Science, Scopus, ERIC, ProQuest, and Google Scholar.

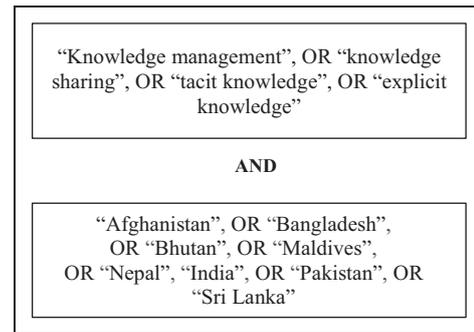


Figure 1. Research keywords and queries.

### Inclusion and exclusion criteria

A structured search was conducted in the world-renowned scholarly databases, to extract relevant records published from 2007 to 2016. Additionally, a manual search was carried out using backward and forward citations of the articles retrieved from the structured search. The studies which include the keywords; 'higher education institution', 'university', 'university administrative staff', 'staff', 'employees', 'faculty members', 'faculty', 'library', 'information professionals' and 'librarians', and published in the English language were included in this study. The literature from the student's perspective and the literature which was deemed not to fit the study scope were excluded from the review. The SLR adopted the specified period mentioned above and, as such, studies published before or after that boundary were not included. In the first step, 779 records were retrieved from the scholarly sources through the structured search. After screening the titles and keywords of the retrieved records, 76 items were found relevant. In the second step, 44 items were extracted through backward and forward citations technique. Finally, screening abstracts, duplication check, and due to the unavailability of 10 full-text research records, SLR identified 50 full-text records that were potentially relevant to this research (Figure 2).

### Limitations of the study

This study is limited to the research published during 2007 to 2016. Moreover, the research reported in the paper includes only the studies published in the context of faculty, administrative staff and information professional/librarian.

## Research findings

The following section reports the research findings that address the objectives of this study.

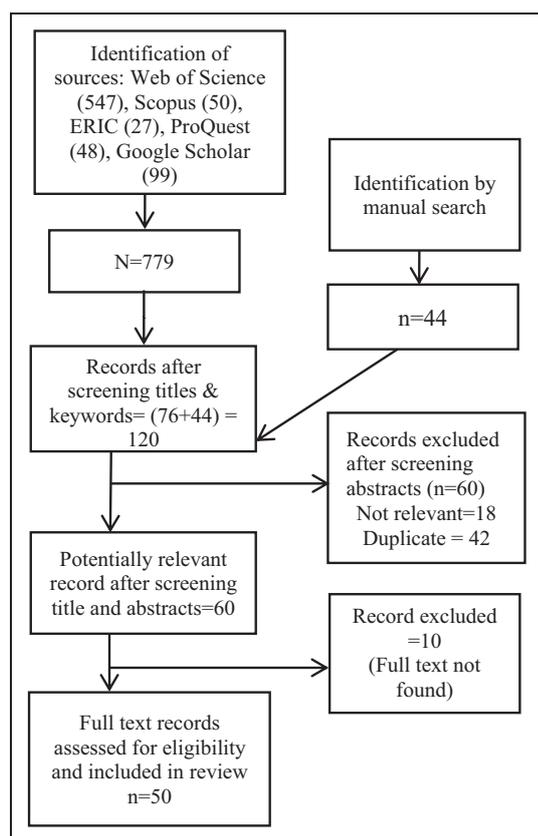


Figure 2. Studies selection procedure.

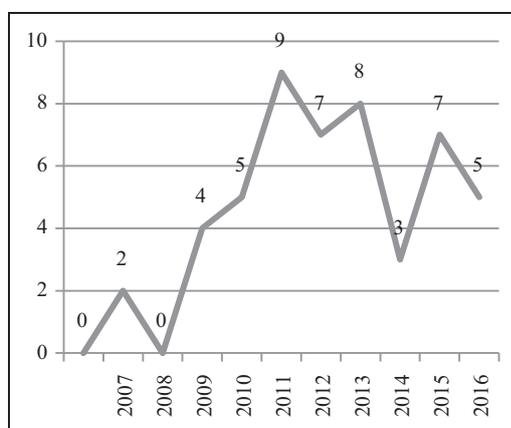


Figure 3. KM research trend.

### KM research trend

The first objective of the study addresses the trend of KM research in the HEIs of the South Asia region. Figure 3 shows the distribution of all the selected studies in the period from 2007 to 2016. The findings revealed that the trend in KM research was increasing until 2011, with an unexplained exception of 2008. After 2012, the numbers of published research seem to stabilize except for 2014.

Out of 50, more than half (29) of the studies were conducted in Indian HEIs compared to Bangladesh

(10) and Pakistan (9), while only two studies were reported from Nepal. No study was found from Afghanistan, Bhutan, Maldives and Sri Lanka. For a better understanding of the data, year-wise detail of the studies is depicted in Table 1.

### Locus and focus of KM research

To achieve the second research objective, the locus and focus of the studies were explored. Firstly, the locus of the studies was identified from the perspective of faculty, employees, librarians and institutional policies. The analysis presented in Table 2 revealed that most of the studies were conducted focusing on librarians (24), followed by faculty members (12), institutional context (8), administrative staff (3), and finally faculty and staff taken as a homogeneous group (3).

The following section presents the findings retrieved from the selected studies of this review. The findings are explained concerning existing KM practices and their benefits, followed by key challenges and considerations needed for successful KM practices in the HEIs.

The findings showed that the institutions need to develop KM policies to enable effective sharing and management of knowledge. Among the core HEIs actors, faculty members played a pivotal role in publishing research, teaching materials, providing consultation and conducting other professional activities in addition to their teaching assignments (Islam et al., 2013; Santosh and Panda, 2016). Increasingly, the use of technology in teaching and learning caused universities to transform how explicit knowledge is produced, stored, disseminated and appropriated by the organizations. Researchers indicated that faculty members were fully aware of the importance of KS, but they were focused mainly on teaching activities and sharing of learning resources (Islam et al., 2013; Shahzadi et al., 2015), while for sharing of research knowledge, in tacit and explicit form, multiple methods were in use such as books, journals articles, conference presentations and papers, informal discussion and sharing of research findings (Santosh and Panda, 2016). Furthermore, the research studies investigated factors relevant to individual behaviour, group behaviour and organizational policies that play a central role in shaping faculty members' positive behaviour towards sharing of knowledge (Agarwal et al., 2012; Islam et al., 2013; Lodhi and Ahmad, 2010; Shahzadi et al., 2015; Shaikh and Akhtarasha, 2016).

The findings exposed that library and information science (LIS) professionals possess adequate knowledge of KM and have the ability to put them in a better

**Table 1.** KM research status in the HEIs of South Asian countries.

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Bangladesh	–	–	–		1	3	1	3	2	–
India	2	–	3	4	5	3	4	–	4	4
Nepal	–	–	–	–	1	1	–	–	–	–
Pakistan	–	–	1	1	2	–	3	–	1	1

**Table 2.** Locus of KM research in the HEIs of South Asian countries.

Research subjects	Reference
Faculty Members	Santosh and Panda (2016); Shaikh and Akhtarasha (2016); Shahzadi et al. (2015); Munir et al. (2013); Islam et al. (2013); Agarwal et al. (2012); Gautam (2012); Mamta and Jayanthi (2012); Pudashine and Rana (2011); Lodhi and Ahmad (2010); Madan and Khanka (2010); Doctor and Ranachandran (2007)
Administrative staff/ Employees	Iqbal (2015, 2016); Abbass et al. (2011)
Librarians	Poonkothai (2016); Rao (2016); Dhamdhare (2015); Mostofa and Mezbah-ul-Islama (2015); Islam et al. (2015); Ali and Khan (2015); Khan (2014); Islam and Khan (2014); Islam et al. (2014); Shah and Mahmood (2013); Nazim and Mukherjee (2013a, 2013b); Yadagiri and Kumar (2013); Hoq and Akter (2012); Mostofa (2012); Siddike and Munshi (2012); Sheeja (2012); Siddike and Islam (2011); Nazim and Mukherje (2011); Gaikwad et al. (2011); Rah et al. (2010); Aswath and Gupta (2009); Raja et al. (2009); Shahid (2009)
Faculty and staff HEIs	Bhusry and Ranjan (2011a, 2011b); Khan et al. (2013) Kumar (2015); Sagar and Kim (2015); Bakshi (2013); Ranjan (2011); Shreemali and Rathore (2011); Adhikar (2010); Mikulecky and Lodhi (2009); Ranjan and Khalil (2007)

way to improve their practices (Rao, 2016). So, it is suggested that LIS professionals should take an interest in KM and its application to offer state-of-the-art information services and facilitate improved retrieval and transfer of information (Dhamdhare, 2015; Siddike and Munshi, 2012). Moreover, they should consider technological, organizational, environmental and individual factors impacting KS practices of academic librarians (Nazim and Mukherjee, 2013; Shah and Mahmood, 2013; Islam and Khan, 2014; Siddike and Islam, 2011; Khan, 2014).

The potential areas of KM applications in libraries are found to be reference and information services, policy and decision making, administrative services, and planning of information service (Nazim and Mukherjee, 2013). Information professionals can derive benefits from being an expert in KM in the form of increased job opportunities (Ali and Khan, 2015) and better career prospects (Nazim and Mukherjee, 2013).

KM practices in HE libraries can be followed through brainstorming, open discussions, sharing of ideas, organizing workshops, conferences, mentoring and identification as well as collectively addressing problems and finding solutions (Poonkothai, 2016). Also, multiple platforms, such as portals, gateway

websites, intranets, telephones, instant messenger, groupware, digital warehouses and web conferencing support in KS (Islam, 2015 et al.). Finally, academic librarians are seen to play a fundamental role in the training of all HE staff, including their staff in developing skills that are perceived to be related to KM, such as information literacy, IT skills and information services use (Raja et al., 2009).

Researchers mentioned that the academic and non-academic staff hold a diverse type of knowledge and most successful institutions are those in which KM practices become part of everyone's job (Mikulecky and Lodhi, 2009). Therefore, HEIs should develop and adopt policies that integrate administrative and academic KM approaches using people, processes and technology (Kumar, 2015; Shreemali and Rathore, 2011). Effective KM practices result in the development of sustainable competitive advantage of institutions (Madan and Khanka, 2010), bringing organizational effectiveness (Khan et al., 2013; Munir et al., 2013) and sustainable improvement of organization performance (Mikulecky and Lodhi, 2009).

Researchers disclosed numerous challenges confronting KM practices in the South Asian HEIs, such as culture of organization, trust, personality characteristics, personal qualification, motivation level,

training programmes and information technology, collaborative environment, HRM practices, motivational factor, reward, IT infrastructure, KM policies, communication channels, organizational policies (Abass et al., 2011; Adhikar, 2010; Agarwal et al., 2012; Bakshi, 2013; Islam and Khan, 2014; Islam et al., 2013; Khan, 2014; Lodhi and Ahmad, 2010; Nazim and Mukherjee, 2013; Ranjan, 2011; Ranjan and Khalil, 2007; Sager and Kim, 2015; Shah and Mahmood, 2013; Siddike and Islam, 2011; Shahzadi et al., 2015; Shaikh and Aktharsha, 2016).

To address the challenges confronting KM practices, researchers emphasized that institutions should develop KM policies to enable effective sharing and management of knowledge. In this regard promoting of KS among the actors in the institutions with the support of an institutional repository (Doctor and Ranachandran, 2007) and support of the respective local government and HE commissions for implementing KM initiatives at an institutional level should be included (Iqbal, 2015; Mikulecký and Lodhi, 2009). At a broader level, it was proposed that creating an education network with the support of all stakeholders of the institutions will also enable KS between stakeholders at different institutions in the region (Pudashine and Rana, 2011). Bhusry and Ranjan (2011a: 40) also suggested that 'IT-based KM intervention in HEIs can prove to be a promising techno-management tool to enhance performance in the vital areas of teaching and learning, research and administrative services'. In another study, they proposed that an IT-based KM framework could enable faculties and staff to capture, structure and disseminate institutional knowledge in a better way (Bhusry and Ranjan, 2011b).

In summary, research on KM is growing in the South Asian region; however, research on KS between university academia and administrative staff is still scarce in the region.

### Factors affecting KM practices

The study also addresses the factors that have impact on the success of KM in the HEIs of the South Asia region (Research objective 3). Once identified, these factors were clustered into three main categories: (1) individual, (2) organizational and (3) technological (Table 3).

## Discussion

### *General synthesis and discussion of findings*

The literature has established that KM is gaining importance in the HEIs located in the South Asian

region, and the KM practices are beneficial to the HEIs in multiple ways. The diverse types of knowledge in HEI, organizational, teaching and research knowledge, is vital for bringing effectiveness in organizational working (Khan et al., 2013; Munir et al., 2013), improvement in organizational performance (Mikulecky and Lodhi, 2009) and ultimately developing competitive advantage (Madan and Khanka, 2010; Munir et al., 2013). Organizational effectiveness in HE institutions through KM practices can be achieved in multiple ways. Likewise, KS support the HEIs in decision making in different areas such as curriculum development, improving competitiveness for research grants, applying best practices and using technology (Howell and Annansingh, 2013). In the same vein, HEIs are struggling to achieve a competitive advantage to attract talent as well as compete for government funding. Therefore, they are promoting KS practice, which provides benefits to them for utilizing their knowledge resources in a better way (Al-Kurdi et al., 2018).

Competitive advantage is of a changing nature, and mostly depends on the incorporation of knowledge into all of an organization's activities (Corcoran and Duane, 2018). Therefore, in order to bring effectiveness in work routine, improving organization performance and competitive advantage, HE institutions are trying to develop policies for managing and sharing tacit and explicit knowledge by applying KM techniques for people, processes and technology (Kumar, 2015; Shreemali and Rathore, 2011). In this context, HE regulatory bodies of the South Asian region are playing a supportive role by maintaining standards for quality education in the HEIs. So, their role is considered vital in devising institutional policies for innovative initiatives.

The growing trend of research on KM and its benefits enabled the policymakers to rethink their management policies. Mainly the research in the context focused on the sharing of knowledge among actors of the HEIs. Besides these, some studies identified the status and outcomes of KM initiatives. Dhamdhare (2015) indicated that Indian institutions had started realizing the importance of KM and thinking about managing their knowledge assets in better ways. Although KM is at initial stages in the institutions, it has been acknowledged to be a strategic asset for the success of the institutions.

In practice, KM implementation cannot be successful until it gets support from all the concerned stakeholders of the HEIs as well as from the government regulatory authorities. In this regard, the HEIs core actors, e.g. faculty, administrative staff, librarians and students, collectively form a community and they are required to play their vibrant role in KM implementation (Hawkins, 2000). Furthermore, the integration

**Table 3.** Factors affecting KM practices in the HEIs of South Asian countries.

Factor	Reference	Count
<b>Individual</b>		
Attitude, intention	Islam and Khan (2014); Mostofa and Mezbah-ul-Islam (2015); Santosh and Panda (2016); Shahzadi et al. (2015); Yadagiri and Kumar (2013); Kumar (2015)	6
Awareness of KM	Mostofa and Mezbah-ul-Islam (2015); Islam et al. (2015); Khan (2014); Nazim and Mukherjee (2013)	4
Trust in KM	Santosh and Panda (2016); Khan (2014)	2
Self-efficacy and self-esteem	Shah and Mahmood (2013); Shahzadi et al. (2015)	2
Individual motivation	Shahzadi et al. (2015)	1
Job security	Khan (2014)	1
Enjoyment in helping others	Shahzadi et al. (2015)	1
Willingness for cooperation and collaboration	Islam and Khan (2014); Mostofa and Mezbah-ul-Islam (2015)	4
Capacity to deal with change	Poonkothai (2016)	1
Capacity to deal with information overload	Mostofa and Mezbah-ul-Islam (2015)	1
Capacity to capture knowledge	Poonkothai (2016)	1
Adequate expertise	Mostofa and Mezbah-ul-Islam (2015); Poonkothai (2016)	2
Management skills	Khan (2014)	1
<b>Organizational</b>		
Organizational structure	Agarwal et al. (2012); Siddike and Islam (2011); Kumar (2015)	3
Culture	Agarwal et al. (2012); Hoq and Akter (2012); Mostofa and Mezbah-ul-Islam (2015); Santosh and Panda (2016); Siddike and Islam (2011)	5
Qualified and skilled staff	Mostofa and Mezbah-ul-Islam, 2015; Islam et al., 2015; Islam and Khan, 2014; Yadagiri and Kumar, 2013, Rao, 2016; Kumar, 2015	6
Leadership and management support	Khan (2014)	5
Adequate reward scheme	Gautam (2012); Santosh and Panda (2016); Khan (2014); Kumar (2015)	4
Training scheme	Islam et al. (2015); Khan (2014); Mostofa and Mezbah-ul-Islam (2015); Nazim and Mukherjee (2013)	4
Adequate budgets	Islam et al. (2015); Mostofa and Mezbah-ul-Islam (2015)	2
Organizational initiatives	Mostofa and Mezbah-ul-Islam (2015); Siddike and Islam (2011)	2
Existence of opportunities to share knowledge	Gautam (2012)	1
KM policies and strategies	Agarwal et al. (2012); Gautam (2012); Dhamdhare (2015); Shreemali and Rathore (2011); Poonkothai (2016); Dhamdhare (2015)	6
Adequate HRM practices	Siddike and Islam (2011); Iqbal (2015)	2
Outcome expectations	Shahzadi et al. (2015)	1
<b>Technological</b>		
IT infrastructure	Agarwal et al. (2012); Poonkothai (2016); Islam et al. (2015); Mostofa and Mezbah-ul-Islam (2015); Islam and Khan (2014); Khan (2014); Yadagiri and Kumar (2013); Hoq and Akter (2012); Shreemali and Rathore (2011); Siddike and Islam (2011)	10
Communication channels	Islam et al. (2015); Islam and Khan (2014); Khan (2014); Santosh and Panda (2016)	4
Technical support	Gautam (2012); Islam and Khan (2014); Santosh and Panda (2016)	3

among all the actors, provision of technological infrastructure, and needed skills are essential in this respect (Islam and Khan, 2014; Ranjan, 2011; Ranjan and Khalil, 2007). On the other hand, some countries in the region such as Bangladesh, India and Pakistan, are still far behind in the state-of-the-art technological infrastructure (Marginson, 2011).

In South Asian HEIs, academic staff are as seen active players of KS (Islam et al., 2013; Santosh and Panda, 2016), and quite familiar with technology usage in teaching activities and sharing of research and learning resources (Islam et al., 2013; Santosh and Panda, 2016; Shahzadi et al., 2015). Faculty members possess higher qualifications and avail

multiple opportunities for knowledge generation, sharing and dissemination during their professional activities; hence, they are more open towards KS culture within and outside the institutions. From the administrative staff perspective, they shared their knowledge with their colleagues and are seen as influenced by human resource management practices (HRM) during their KS practices (Iqbal, 2015, 2016).

Librarians are facing challenges due to the information revolution and ever-changing demands of contemporary users. It can be seen worldwide that 21st-century academic libraries have extended beyond the walls of their institutions for open access information spaces, dealing with intelligent Internet sharing tools and online social communication, and networking technologies (Tait et al., 2016). Libraries in the HEIs seem to be well equipped and able to address the needs of their users, and similarly, librarians are well aware of the benefits of KM and its application. However, in the case of Bangladesh, it can be seen that they are not qualified enough to perform the tasks effectively (Islam, 2015; Rao, 2016). Similarly, from the Pakistani context, Shah and Mahmood (2013) mentioned that KM in academic libraries is at the initial stage, and most librarians do not have sufficient knowledge about its applications. These issues can be addressed by hiring qualified librarians (Aswath and Gupta, 2009) and training the existing professionals through continuing education in the form of lectures, conferences and workshops through which they may be able to brainstorm ideas and share knowledge with their colleagues. Ultimately, this practice will help to develop KS culture among them (Poonkothai, 2016). From these efforts, librarians can not only get benefits for their work and provide better services to their users, they can also play a demanding role in the training of the HEIs staff in developing skills that are perceived to be related to KM, such as information literacy, IT skills and information services use (Raja et al., 2009).

Several factors categorized as an individual, organizational and technological factors were identified that impact KM practices of the South Asian HEIs (Table 3). These factors can be minimized by devising strategies and promoting KS through cooperation, coordination and collaboration among the key players (Rowley, 2000; Toro and Joshi, 2013), as well as through the support of the concerned government regulatory organizations in the respective country (Iqbal, 2015; Mikulecký and Lodhi, 2009).

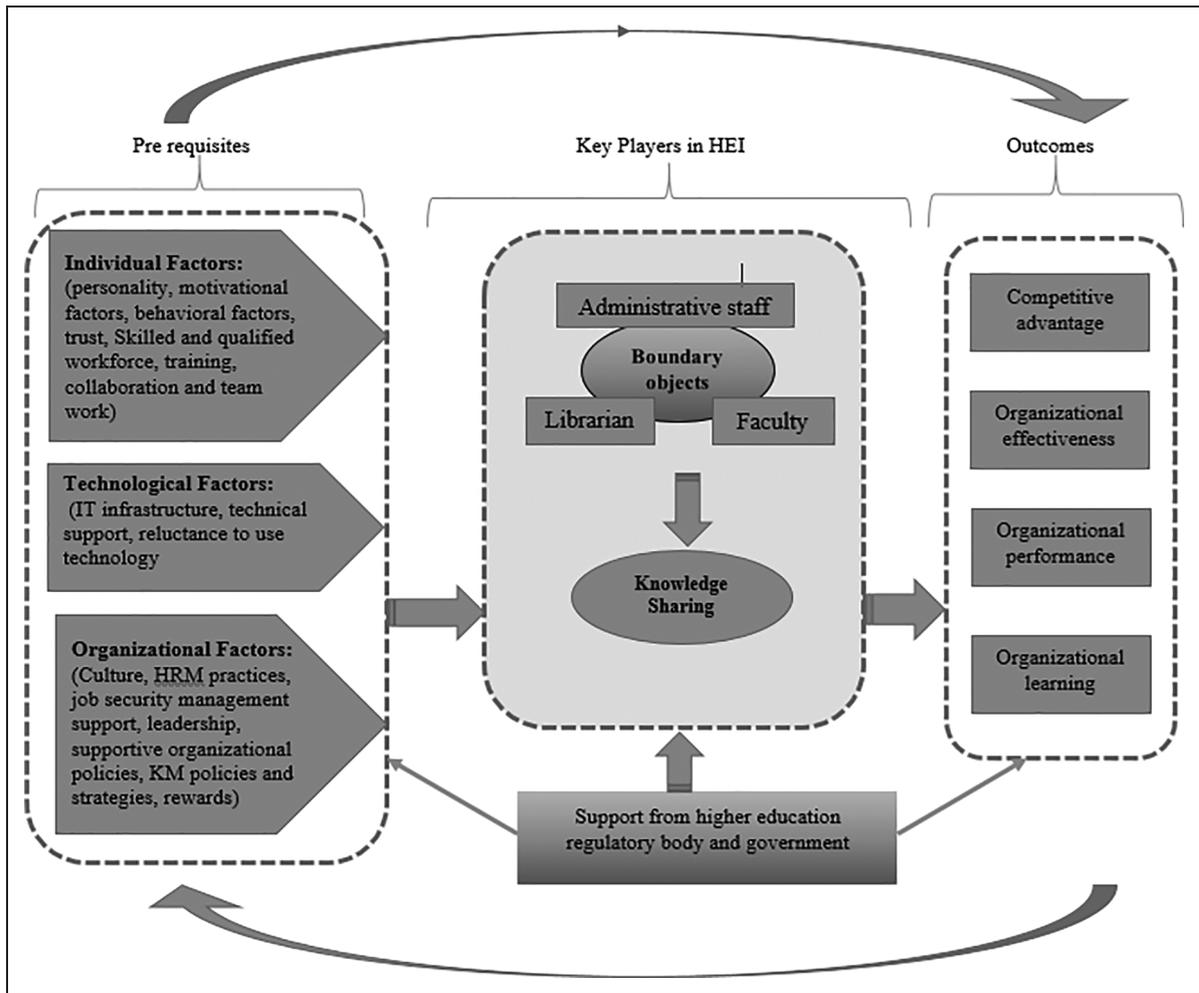
In HEIs, faculty and administrators are two key actors having different cultural and professional orientations (Favero, 2002). They play a central role in achieving the mission of education, research

advancement and public service through regular communication and interaction with each other (Conway, 1998; Kuo, 2009). Through cooperation, coordination and collaboration, they can also contribute jointly in promoting KS culture within the HEIs. There are much-qualified staff working in administrative and supporting roles who can assist in teaching and learning processes if they are provided with an opportunity to collaborate on course delivery and research. Likewise, academics can contribute to the efficient functioning of the HEIs if they are consulted and engaged by the management (Corcoran and Duane, 2017). KS during communication and collaboration between faculty and administrative staff is considered necessary for comprehending institutional policies and developing positive inter-professional working behaviour, and helping them in solving a work-related problem (Rahman et al., 2015; Seyd, 2000).

However, the findings of the review revealed that researchers in the South Asian region addressed KM and KS practices among the homogenous group, faculty, librarian or administrative staff, of the HEIs. They did not explore the issues associated with sharing knowledge between the heterogeneous groups in the HEIs. Research in the context of examining KS between heterogeneous groups within and across individuals or organizations proposed the use of artefacts known as boundary objects. These artefacts enable people to learn from each other, and to act as agents in co-generating, bridging and disrupting understandings (Hawkins et al., 2017). Boundary objects enhance communication among groups and help them to access knowledge that would otherwise be inaccessible. The boundary objects are considered to be connectors between different groups and within communities and allow them to improve their practices by sharing knowledge (Fong et al., 2007; Huang and Huang, 2009; Huvila et al., 2017; Impedovo and Manuti, 2016).

### *Development of conceptual framework*

The findings and discussion section of this study depict that KM practices are gaining importance in the HEIs. The research's findings also supported that successful implementation of KM and KS brings numerous benefits to individuals and institutions in the form of improved academic, research and administrative services. Individual learning leads to organizational learning and benefits the HEI in obtaining improved performance and competitive advantage in the knowledge-based economy. The findings also established that individual, organization and technological factors as well as government policies influence KM practices in the HEIs.



**Figure 4.** Conceptual framework for KS.

Building on the synthesis of the study’s findings and discussion above, this study developed a conceptual framework consisting of five dimensions: (1) key players, faculty, administrative staff and librarians (2) pre-requisites, (3) boundary objects, (4) the government policies on the HEIs, and (5) outcomes (Figure 4).

In the framework, pre-requisites, the role of HE regulatory authority and outcomes of KM initiatives are included on the basis of findings and discussion of this research. Pre-requisites are grouped as individual, organizational and technological factors (Table 3). Although the pre-requisites and outcomes are well discussed in KM literature, their impact has not been explored through the lens of boundary objects in the extant literature from the HEIs perspective.

The proposed framework guides KS practices from the perspective of mediating artefacts among the key actors of HEIs from the South Asian perspective (Figure 4) and anticipates gains in performance, competitiveness and effectiveness in work routine. This framework is helpful to comprehend how a university

administration can address individual, organizational and technological factors for promoting KS culture among the key players of the institution. Moreover, the identification of boundary objects and their role in KS among heterogeneous groups will be helpful for the institutions in supporting and strengthening the objects to promote KS in the institution. Since the HEIs of the region are working under their respective government regulatory bodies, before taking any KM initiative at an institutional level, the regulatory authorities should be taken on board for formulating relevant policies. Thus, the framework can work in a better way if support from the concerned HE regulatory organizations is provided.

This study offers practical and theoretical implications in KM literature. Practically, this framework will be helpful in understanding KS practice through the lens of application of boundary objects among the key actors of the HEIs of the South Asian region. Theoretically, this framework is a valuable addition in KS literature from the boundary objects perspective.

## Conclusions

This study explored KM practices in the HEIs of the South Asia region by adopting the SLR approach. The research findings reveal that there is a clear awareness in academic, institutional and government circles of the importance of KM in HE. KM practices bring numerous benefits to the institution as a whole as well as creating an effective KS culture within HEI. However, it is evident from the numbers of studies found and presented in this study, that scholars conducted limited KM research in the region. From the very interesting and incisive research it was found that it is crucial to integrate all the HE institutional stakeholders (academic faculty, administrative staff and LIS experts) into the effort of KM, not just the academic librarians. Various enabling factors were identified impacting on effective KM practice. These factors were categorized into three types: (1) individual, (2) organizational and (3) technological. A synthesis of the study's findings resulted in a conceptual framework built on the gaps identified in KS research in the region. This conceptual framework provided a general understanding of KS among the prominent groups of the HEIs and proposed to integrate boundary objects, which enable them to share their knowledge. This framework is also expected to provide directions and focus on future KM research.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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International Federation of  
Library Associations and Institutions  
2019, Vol. 45(4) 322–333  
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sagepub.com/journals-permissions  
DOI: 10.1177/0340035219868824  
journals.sagepub.com/home/ifi



# Entrepreneurial opportunities: A roadmap for diversifying financial sources in libraries, Tanzania

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## Abstract

Dwindling of operating budgets is one of the longstanding problems libraries of different kinds and sizes face. This study has examined entrepreneurial opportunities and ventures available at Muhimbili University of Health and Allied Sciences (MUHAS) and Tanzania Library Services Board (TLSB) libraries in Tanzania. The study employed both qualitative and quantitative approaches to data collection and analysis. Apart from key informant interviews and observations, primary data were collected from 55 library staff using self-administered questionnaires. The study discloses that entrepreneurship opportunities were insignificantly harnessed to diversify financial sources at these libraries. The findings further inform that donors and the government remain the principal sources of income for these libraries. On the basis of the findings, the study recommends that libraries should formulate and implement strategic plans that will guide entrepreneurship projects. Also, as a way to create entrepreneurship readiness, capacity building among library staff has been recommended.

## Keywords

Academic and public libraries, entrepreneurship venture, financial diversification, income-generating sources, Tanzania

Submitted: 1 February 2019; Accepted: 12 June 2019.

## Introduction

The statuses of academic and public libraries as hubs of information resources for research, teaching, and learning and that of university libraries as hearts of universities (Mwantimwa, 2007) is, as it has been for years, being undermined by limited financing. These financial problems have been observed to be not limited to libraries of particular size, type, or geographical location (Akporhonor, 2005; Alemna, 1994, 1998; Kirk, 2005; Mapulanga, 2012; Nawe, 2004; Okiy 2005; Okojie, 2010). Carpenter (2012) and Kirk (2005) confirm that the insufficiency of funds faced by academic and public libraries globally undermines

their efforts to meet targets. Nonetheless, the situation has continued to worsen for a long time. Undeniably, dwindling of operating budgets is one of the longstanding problems libraries of different kinds and sizes face that negatively affects the quality of services offered and possibilities of expanding them through improvement of resources and facilities. Such situations have been associated with negative

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developments on collection growth and service delivery (Akporhonor, 2005; Alemna, 1998; Nawe, 2004; Okojie, 2010). Similarly, studies (e.g. Issak, 2000; Mwantimwa et al., 2017) report that financial constraints result in a shortage of up-to-date and relevant information resources in most of the libraries.

Budget challenges faced by most academic and public libraries in Tanzania are a result of dependence on foreign aid, parent institutions, and central governments financially, a state that leaves the variety and quality of services in jeopardy (Akporhonor, 2005; Alemna, 1994, 1998; Okojie, 2010). It is therefore no surprise that majority of such libraries are struggling to provide quality services. With this traditional model of financing services, libraries fail to meet costs of providing quality services (Kirk, 2005). In light of such a situation, the author asks if libraries can draw upon new wealth without abandoning traditional missions, to which the following statement is given as an answer:

To do so, we need to make radical changes, starting with our mindset. We need to understand the value of our services and then move from being one of many resource allocation points (pure recipients of institutional funding) to being a resource attractor (a magnet for many sources of funding). (Kirk, 2005: 255–256)

This narration informs that deliberate efforts to transform some conventional library services into entrepreneurial opportunities are requisite to solving funding issues. Therefore, for libraries to survive and continue providing essential and quality services, strategizing financing (Cox, 2004; Nawe, 2004) through venturing into entrepreneurship is quite important (see for example, Farkas, 2012; Jain, 2012; Sa'ari et al., 2013). In fact, literature show that there are diverse entrepreneurial initiatives taking place in different academic and public libraries worldwide (Kirk, 2005).

Studies that highlight how financing challenges inhibit the variety and quality of services provided by academic and public libraries in Tanzania are extensive (e.g. Alphonse, 2015; Mwantimwa, 2007; Mwantimwa et al., 2017; Nawe, 2004). However, those that have covered entrepreneurial opportunities that can be used to diversify financial sources are lacking, leaving questions surrounding such matters unanswered. No wonder, little remains known on entrepreneurial opportunities available to academic and public libraries in Tanzania that can be exploited to diversify sources of funds for sustaining the quality and quantity of library services. As a result, this study set out to examine such opportunities at MUHAS and

TLSB libraries, in Tanzania. Specifically, the study has: examined the types of entrepreneurial opportunities available; examined librarians' possession of competencies for venturing in entrepreneurship; established the extent to which entrepreneurial opportunities are contributing to diversification of sources of funds; and examined challenges that undermine entrepreneurship ventures at the two libraries.

## Literature review

The question of diversifying sources of finance in libraries is not new. Since the 1980s, numerous writings have stressed the importance of creating an environment where sources of income complement each other (see for example, Alemna, 1994, 1998; Ekoja, 1996; Faulkner, 2018; Nawe, 1988). However, the question that continues to stand is: what are these sources of income? In other words, what kinds of entrepreneurial activities can be incorporated in libraries services? For a long time, libraries have been offering conventional services-based fees of varying amounts of money. Examples of such services are faxing, printing, publishing, photocopying, binding, cost recovery, and convenience, while clients are also subjected to overdue charges (Alemna, 1994; Ekoja, 1996; Kirk, 2005; Mapulanga, 2012; Okiy, 2005). However, the question is, are these entrepreneurial ventures? If they are not, what distinguishes entrepreneurship ventures from conventional fee-based services? According to Kirk (2005: 256)

it is not just a new hip name for longstanding and controversial ideas, entrepreneurship is focused on bringing new income in-revenue streams that begins by a redefinition of the physical, expertise and intellectual infrastructure of the library and a new understanding of the economics of innovation.

From this conceptualization, conventional fee-based services and other charges are income-generating endeavours but cannot be treated as entrepreneurship ventures per se. However, such activities form a strong baseline for venturing entrepreneurship because they can be transformed into entrepreneurship opportunities.

Toane and Figueiredo (2018) state that entrepreneurship is one of the fastest growing areas on academic campuses. There is also evidence that libraries in different parts of the world are investing in income-generating projects that transform conventional fee-based service into entrepreneurship ventures (Mapulanga, 2012), an example being the libraries of Johns Hopkins University. Similarly, Sheridan Libraries in the US have adopted standard business

practices for entrepreneurial projects to solve inadequate funding problems. These measures include writing professional business proposals with clearly-defined financial structures and possessing attractive building blocks assets for business (Kirk, 2005). Likewise, notable entrepreneurial activities have been initiated by academic libraries in Victoria, Australia. For example, an information service librarian and geographer at the University of Melbourne designed a product that enables desk-top production of colour maps of virtual combination of social data (Carpenter, 2012). It is also important to note that other libraries advance professional entrepreneurial activities such as business plan competitions, copyright services, patent and trademark resources, programmes that engage in coding and provide specialised business database services, printing, and digitization projects (see Rippa and Secundo, 2018; Vecchione, 2018; Wright, 2016) and lending business space in their buildings (Mapulanga, 2012). These are just some of the examples that confirm libraries' adoption of business-orientated approaches to offset shortcomings of the traditional funding approach.

However, to effectively venture into entrepreneurship projects, a proper combination of competencies and other important attributes must be ensured. Based on the reviewed literature, competencies and attributes needed in library entrepreneurship vary (Farkas, 2012; Idowu and Musbaudeen, 2018; Rippa and Secundo, 2018; Toane and Figueiredo, 2018; Vecchione, 2018). For example, Kirk (2005) discloses that highly proactive attitudes and actions rooted in willingness of a number of individuals to participate in joint efforts are important. This clearly indicates that positive attitudes and action are important for libraries that intend to venture into entrepreneurship. Literature further shows that research management, outreach, marketing, innovation, and problem solving are key entrepreneurship competencies needed by libraries (Toane and Figueiredo, 2018). Regarding research management, some scholars (e.g. Rippa and Secundo, 2018) specify that big data management competencies increase the value of entrepreneurship ventures in an academic landscape. Besides these, skills in advocacy, assessment, communication, instructional design, project management and multiple literacy are categorized as new competencies needed in libraries (Kauffman, 2008). Apart from that, to successfully partake in entrepreneurship, libraries also need financial management and business plan writing skills (Vecchione, 2018). Further to that, being a team player, experimental, transparent, accountable, responsive, a risk taker, and inclusive are said to make staff members more suited for

entrepreneurship (Kauffman, 2008; 2011; Scanlon and Crumpton, 2018). In all, the combination of necessary competencies and sets of skills enhances libraries' ability to effectively venture into entrepreneurship projects.

On the importance of diversifying income in libraries, various scholars (e.g. Alemna, 1994; Kirk, 2005; Mapulanga, 2012; Okojie, 2010; Patel and Patel, 2013) believe that implementing and managing multiple income-generating projects is critical to establishing reliable library revenue inflow. The diversification of income sources in libraries is considered as an innovative and creative approach for offsetting financial constraints. On this, Crumpton (2012: 99) testifies that:

Entrepreneurship is an innovative method and technique to offset budget woes as well as infusing some people with an entrepreneurial spirit to create, promote, and utilize products, processes and services in different ways. In today's economic environment, innovation will be sorely needed to deal with changes brought by reduced budgets, technological developments, and social expectations of libraries that are evolving.

This narration clearly informs that venturing into entrepreneurship serves multiple roles: offsetting dwindling budgets, cultivating entrepreneurship mindsets among librarians, dealing with technological changes, and fulfilling social expectations of librarians and clients. This in turn enhances the variety and quality of services through enabling e-resources subscription, building of viable ICT infrastructure, renovation of library buildings, and staff capacity building and motivation. In other words, shifting focus from conventional fee-based services to entrepreneurship helps libraries to meet users' needs and achieve their core missions of supporting their parent universities' research and learning activities (Kirk, 2005; Scanlon and Crumpton, 2011). In general, the multiplication of income-generating projects contributes to viable and reliable growth of libraries (Kirk, 2005; Mapulanga, 2012).

Based on available literature, planning and implementing library entrepreneurship projects are accompanied with a variety of challenges and problems. While examining entrepreneurship opportunities, Idowu and Musbaudeen (2018) found that a majority of librarians lack knowledge on how to convert professional activities into entrepreneurship opportunities, in addition to lacking passion and being faced with limited financial resources. On the other hand, a study by Scanlon and Crumpton (2011: 18) found that the notion that 'libraries are not-for-profit institutions

whose reason for existing is service rather than financial gain' pulls back innovation intentions of libraries. This is supported by Kirk (2005) and Mapulanga (2012), that depending on the single source model in dealing with financial problems deters the effectiveness of library services. To these authors, the single sources model is a kind of incremental approach which cannot take the libraries where they need to go and achieve. The studies (e.g. Kauffman Foundation, 2008; Scanlon and Crumpton, 2018) associated lack of advocacy, ineffective communication, limited project management skills, multiple literacies, and lack of collaborative culture with factors for unsuccessful entrepreneurship projects. Basically, it is safe to conclude that when seeking benefits of entrepreneurship, libraries should expect challenges and problems.

### Study design and methods

This study employed a research approach that applied both quantitative and qualitative approaches to collect, process, and analyse data. In this approach, while its quantitative part was used to collect basic statistical data on demographic characteristics and types of existing entrepreneurship opportunities, potential, and actual entrepreneurship activities, its qualitative part was deployed to collect data on subjective assessment of attitudes, opinions, and behaviours related to entrepreneurship. The approach was preferred because of the descriptive and exploratory nature of data sought.

The study was conducted at Tanzania Library Service Board (TLSB) and Muhimbili Health and Allied Sciences (MUHAS) Libraries. While MUHAS is one of the academic libraries in Tanzania, TLSB is a public library. These libraries were selected for being among longtime providers of conventional fee-based services. At these libraries, the study targeted library directors, senior librarians, librarians, assistant librarians, library assistants, and accountants, who made up a population of 74 staff members (24 from MUHAS and 50 from TLSB) as sources of data from whom a sample of 55 respondents (20 from MUHAS and 35 from TLSB) was drawn (See Table 1).

To pick respondents, the study employed a non-probability sampling procedure. Under this procedure, purposive and convenience sampling methods were used. While the purposive sampling method was used to select library directors and senior librarians, convenience sampling was used to pick librarians, assistant librarians, library assistants and accountants. Generally, as elements are chosen arbitrarily in non-probability sampling, there is no way of estimating the probability of any element being included in the sample, therefore making it difficult to estimate

**Table 1.** Demographic characteristics.

Demographic characteristics (n = 55)		Frequency	%
Libraries	TLS	35	63.6
	MUHAS	20	36.4
Gender	Female	37	67.3
	Male	18	32.7
Age	21–30	24	43.6
	31–40	19	34.5
	41–50	10	18.2
	51–60	2	3.6
Level of education	PhD holders	4	7.3
	Master's degree	5	9.1
	Bachelor's degree	11	20
	Diploma holders	25	45.5
	Certificate holders	10	18.2
Position of respondents	Senior librarians	6	10
	Librarians	7	13
	Assistant librarians	12	22
	Library assistants	30	55

Source: Field data, 2017.

sampling variability or to identify possible bias. Researchers with the notion of purposive sampling assert that, although probability methods are suitable for large-scale studies concerned with representativeness, non-probability sampling methods are more suitable for in-depth qualitative research in which the focus is often to understand complex social phenomena. For this reason, non-probability sampling was, therefore, deemed more applicable for this study.

Furthermore, the study used a combination of methods (triangulation) to collect both secondary and primary data. Secondary data were obtained through documentary reviews. Saunders et al. (2009) state that primary data constitute data observed or collected directly from first-hand experience. In this study, primary data were collected through a cross-sectional survey using structured self-administered questionnaires with both open and closed questions. The questionnaire, which covered different aspects of the study including respondents' background information, entrepreneurship activities, and challenges facing entrepreneurship, was used so as to collect large amounts of data at a minimal cost and within a shortest period. The questionnaires were distributed to the librarians in their respective offices by the researchers and research assistants. The questionnaires were given to the librarians who conveniently selected and agreed to fill them. All 55 questionnaires were returned completely filled. Besides that, interviews and observations were also employed during primary data collection. The interviews, which were face-to-face, were conducted with library management,

particularly directors and people who are strategically placed as decision makers and main speakers for libraries. This type of interview enabled the researchers to successfully collect detailed factual information directly from the 'horse's mouth'. Additionally, questionnaires in this study were designed, administered, and distributed to both MUHAS library and TLSB staff to collect data. Furthermore, the study used observations to confirm some of the information obtained through questionnaires and interviews by verifying the availability of modern equipment such as computers, photocopier machines, printers, and the presence of Internet services and office spaces.

The data collected were subjected to processing that involved a series of steps including identification of data structures, data editing, coding and classifying, transcriptions, and tabulation. After the process, quantitative data outputs have been presented in the form of descriptive statistics, mainly in tabular and graphical forms while qualitative data, which were subjected to thematic analysis, have been presented mainly in narrative form. Quantitative data were analysed using Statistical Product and Service Solution (SPSS) version 20 and Microsoft Excel 2010 which were used to generate descriptive (e.g. frequency and percentage). The combination of the two (descriptive and narratives) was employed to enhance the quality of findings. Mwanitimwa (2012) testifies that descriptive statistics help to determine differences between variable.

## Results and analysis

### *Demographic characteristics*

The 55 respondents drawn from the two libraries were asked to indicate their sex, age, level of education, and job positions. The responses obtained were used to come up with descriptive (frequency and percentage) so as to determine the respondents' composition with regards to study areas and their other characteristics. Table 1 presents a summary of the respondents' details.

Considering the fact that more respondents were picked at TLSB library, it is understandable that a significant percentage (63.6%) of responses came from there. This was down to the sizes of populations at the libraries. In fact, the number of programmes and services offered by a library appear to determine the number of staff members. TLSB offers services to different users with diverse needs and offers elementary, certificate, and diploma programmes hence the size of its population. The results also seem to suggest that the majority of library staff at the two libraries are females considering that 67.3% of respondents were of that sex.

With regards to age, results show that the majority (78.1%) of respondents were aged between 21 and 40 years. In general, the results have revealed that a majority of library staff were youths and young adults. Besides that, the results indicate that most respondents had professional qualifications in librarianship, with adequate levels of education to operate their respective libraries. Moreover, the results indicate diploma holders made the biggest representation (45.6%) with regards to academic qualifications. This can be attributed to the recent trend of job vacancies where the majority of LIS positions advertised have been demanding diploma qualifications, a development that could also be linked to mushrooming of institutions that offer diploma LIS programmes in Tanzania which has resulted in the presence of many graduates at this level.

On a different note, the results show that a good number (55%) of staff in the libraries surveyed were library assistants whereas the least number were librarians and senior librarians. This is understandable because library assistants are the ones that support the day-to-day running of libraries. They are directly involved in lending, handling material returns, shelving, shelf reading, and cataloguing among other things. Considering how demanding such activities are, it makes sense that these libraries have a good number of people who can handle them while keeping fewer of those that are responsible for decision making at higher levels.

### *Existing opportunities, potential professional, and actual entrepreneurship ventures*

The library staff were asked to indicate if they were aware of any existing entrepreneurship opportunities (e.g. conventional fee-based) that can be transformed into actual entrepreneurship activities. The respondents were also asked to mention actual entrepreneurship activities available in their libraries. Alongside these, the library staff were also asked to identify potential professional entrepreneurship activities that could be carried out by their respective libraries. Responses obtained have been processed in the results presented in Table 2.

Results in Table 2 show that the majority (85.5%) of library staff admitted to being aware of existing entrepreneurship opportunities for their libraries while only eight (14.5%) said they were not. With regards to particular opportunities, the results show that most (78.2%) library staff pointed out photocopying while 65.5% mentioned printing and Internet services as conventional fee-based library services that can be transformed into entrepreneurship projects. In

**Table 2.** Existing opportunities, potential, and actual entrepreneurship activities.

Opportunities and activities (n = 55)	Services	Frequency	%
Existing entrepreneurship opportunities	Photocopying	43	78.2
	Printing	36	65.5
	Internet services	36	65.5
	Assigning ISSN and ISBN	24	43.6
	Binding	22	40
	Reader membership fee	10	18.2
Potential professional entrepreneurship opportunities	Digitization projects	43	78.2
	Information literacy programme	35	63.6
	Web designing	33	60
	Desktop publishing	24	43.6
	Consultancy services	22	40
	Information brokerage	21	38.2
	Abstracting and indexing	19	34.5
	Online cataloguing	17	30.9
Actual entrepreneurship activities	Editing and directory compilation	15	27.3
	Training	47	85.5
	Restaurant	31	56.4
	SACCOS	30	54.5
	Office and business space rent	22	40

Source: Field data, 2017.

addition to that, 43.6% mentioned assignment of ISSN and ISBN, 40% named binding while 18.2% mentioned collection of readership fees as entrepreneurship opportunities. Looking at these results, it is clear that a majority of respondents consider their libraries to have a number entrepreneurial opportunities which could be transformed into actual entrepreneurship activities. These results tally with those from key informant interviews. For example, in her words, one key informant from TLSB narrated that:

In our library, we have ample entrepreneurship opportunities to venture in. For a long time our library has been offering various conventional fee-based services such as photocopying, printing, assignment of ISSN and ISBN, binding, and collection of readership and membership fees. I believe some of these can be transformed into actual entrepreneurship activities.

This narration suggests that like other staff members, those in higher positions were aware of their libraries' entrepreneurship opportunities. In fact,

assigning ISSN and ISBN, charging for usage of Internet services, and collection of membership fees were practised by the TLSB library whereas photocopying and printing services were found to be important entrepreneurship opportunities for generating income in their libraries.

Besides that, the results show that library staff were also aware of potential professional entrepreneurial opportunities available for their libraries. Based on the findings, it can be noted that a significant percentage (78.2%) of staff indicated digitization projects as a potential professional entrepreneurship opportunity. Accordingly, information literacy programme was seen in such light by 63.6% and web designing by 60% of staff members as potential professional entrepreneurship opportunities. Another perceptible percentage of the staff named consultancy services, information brokerage, abstracting and indexing, online cataloguing, editing, and directory compilation as opportunities. On this, one key informant shared the following during an interview session:

The time for the library to invest in income-generating projects has come. The opportunities are many, expertise to set strategies and implement the projects is there. The doors are open for libraries to strengthen their plans.

Basing on this quotation, one can infer from these results that MUHAS and TLSB libraries have potential opportunities to introduce and conduct diverse entrepreneurship activities.

With regards to actual entrepreneurship projects, the two libraries engage in training, restaurants services, SACCOS services, and letting office space as indicated by 85.5%, 56.4%, 54.5%, 40%, and 22% of respondents respectively. These entrepreneurship activities were confirmed by results from interview sessions. For example, one of the key informants said: 'in our libraries we have space for rent, which is one of the important sources of income'. Based on the results, SACCOS and restaurant services, and office and business space letting were only available at TLSB library whereas training was offered by both libraries.

### *Librarians' entrepreneurship competencies and attributes*

Library staff were asked to indicate their level of entrepreneurship competencies for the purpose of gaining insights on their ability to introduce and manage entrepreneurship projects in their respective libraries. The staff members were also asked to indicate how important they found key entrepreneurship attributes. Results on the rate of entrepreneurship competencies are summarized in Table 3 while

**Table 3.** Librarians' entrepreneurship competencies.

Competencies (n = 55)	Very adequate	Adequate	Not adequate
Digitization skills	2 (3.6%)	3 (5.5%)	50 (90.9%)
Marketing	18 (32.7%)	26 (47.3%)	11 (20%)
Project management	1 (1.8%)	6 (10.9%)	48 (87.3%)
Writing business plan	0 (0.0%)	2 (3.6%)	53 (96.4%)
Fund proposal writing	11 (20%)	5 (9.1%)	39 (70.9%)
System design and management	4 (7.3%)	11 (20%)	40 (72.7%)
Communication	31 (56.4%)	15 (27.3%)	9 (16.4%)
Research management	9 (16.4%)	14 (25.5%)	32 (58.2%)
Computer and infoliteracies	37 (67.3%)	7 (12.7%)	11 (20%)
Financial management	3 (5.5%)	5 (9.1%)	47 (85.5%)
Instructional design	8 (14.5%)	4 (7.3%)	43 (78.2%)

Source: Field data, 2017.

**Table 4.** Librarians' entrepreneurship attributes.

Attributes (n = 55)	Very important	Important	Not important
Proactiveness	29 (52.7%)	17 (30.9%)	9 (16.4%)
Innovativeness and creativity	38 (69%)	14 (25.5%)	3 (5.5%)
Transparency	31 (56.4%)	19 (34.5%)	5 (9.1%)
Collaboration	41 (74.5%)	8 (14.5%)	6 (10.9%)
Accountability	27 (49.1%)	24 (43.6%)	4 (7.3%)
Risk taking	29 (52.7%)	11 (20%)	15 (27.3%)
Inclusiveness	18 (32.7%)	27 (49.1%)	10 (18.2%)
Passion	33 (60%)	15 (27.3%)	7 (12.7%)
Decision making	43 (78.2%)	10 (18.2%)	2 (3.6%)

Source: Field data, 2017.

those on entrepreneurship attributes are presented in Table 4.

The results in Table 3 show that computer and information literacy, and communication skills were the most common entrepreneurship competencies among library staff members involved in this study. This is so considering that 67.3% and 12.7% of respondents said they were very adequately and adequately competent in computer and information literacy respectively, while 56.4% and 27.3% said they were respectively very adequately and adequately competent in communication skills. Similarly, one key informant testified that:

Most of our library staff have the ability to use computers very effectively, such that, they are able to retrieve information from various sources and train our library users how to do the same.

Other than these competencies, the results indicate that close to one-third (32.7%) and 47.3% of library staff had very adequate and adequate marketing skills respectively.

On the other hand, the results demonstrate that a majority of library staff had inadequate competency in writing business plans (96.4%), digitization (90.9%), project management (87.3%), and financial management (85.5%). These are followed by inadequacies in instructional design skills (78.2%), system design and management (72.7%), fund proposal writing (70.9%), and research management skills (58.2%).

On the importance of entrepreneurship attributes, the results indicate that noteworthy percentages (>50%) of library staff considered decision making, collaboration, innovativeness and creativity, passion, transparency, risk taking, and proactiveness as very important entrepreneurship attributes. In addition to that, close to half (49.1%) of library staff considered accountability as a very important entrepreneurship attribute while the same percentage (49.1%) rated inclusiveness as an important attribute of the same. These results tally with those from key interview sessions. For example, in her words, one of the key informants stated that:

Sometimes you could have all the needed entrepreneurship competencies but without necessary attributes such as passion and proactiveness it is not easy to venture into entrepreneurship. Another attribute needed by someone implementing entrepreneurship projects is the ability to take risks and collaborate with other people.

Another key informant stated that:

Creativity and innovativeness are very important attributes for ensuring successful engagement in entrepreneurship activities by our libraries. If we are going to effectively embrace entrepreneurship culture, our staff members need to possess these attributes.

These quotations are clearly in support of the notion that besides entrepreneurship competencies, libraries would not successfully venture into entrepreneurship without necessary attributes.

#### *The role of entrepreneurship activities in the diversification of library financial sources*

Respondents were asked to give their views on the contribution of entrepreneurship activities to the diversification of financial sources of their libraries. Data analysis outputs indicate that 31 (56%) respondents felt that entrepreneurship activities helped to diversify such sources while 24 (44%) were of the

**Table 5.** The role of entrepreneurship opportunities in financial sources diversification.

Role in financial sources diversification (n = 55)	Frequency	%
Helps to acquire stationery and consumable goods	39	70.9
Enables the acquisition and improvement of working facilities	28	50.9
Helps to repair library facilities	25	45.5
Income gained is used to buy binding materials	17	31
Income gained is used to provide incentives to library staff	15	27.3
Some of the income generated helps to support staff development	11	20

Source: Field data, 2017

opposite feeling. The respondents were further asked to specify the role entrepreneurship opportunities in financial sources diversification play in supporting library services provision and Table 5 summarizes data outputs on this.

These findings show that entrepreneurship opportunities at these libraries help in the acquisition of stationery and consumable goods as indicated by a majority (70.9%) of library staff, and acquisition and improvement of the working facilities as revealed by 50.9% of respondents. The results further indicate that close to a half (45.5%) of respondents said that income generated from entrepreneurship helped in the repairing of library facilities. Apart from that, close to one-third (31%) of respondents said that entrepreneurship income was used to provide incentives to the library staff while 20% said the income was used in staff development. Clearly, these libraries' engagement in income-generating activities has helped them to improve their services and facilities. One key respondent shared more on this as follows:

Funds allocated for library services are not sufficient but there are activities being carrying out to supplement the available resources. The library conducts short courses, seminars, workshops, and offers consultancy services so as to raise funds. It is through the money we get from these extra activities along [sic] what we get through allocation that we are able to sustain our services while exploring ways to improve.

Another key informant disclosed that:

The financial income we are generating from the existing conventional fee-based library services and other entrepreneurship ventures helps our library to accumulate capital for starting other entrepreneurship ventures.

**Table 6.** Challenges faced by entrepreneurship activities in libraries.

Challenges (n = 55)	Frequency	%
Lack of financial capital inhibit the sustainability of entrepreneurship ventures	47	85.5
Inadequacy of entrepreneurship skills and knowledge among librarians hampers viable entrepreneurship decision making	44	80
Poor library infrastructure hampers entrepreneurship	39	70.9
Technophobia among librarians inhibits intentions to start-up professional entrepreneurship ventures	26	47.3
Librarians' negative attitudes and mindsets towards entrepreneurship hamper library entrepreneurship ventures	22	40

Source: Field data, 2017.

This is a great opportunity to lessen the challenges that are likely to come with shrinking budgets we receive from the government.

These narrations clearly show that entrepreneurship opportunities help libraries to diversify income sources, which in turn, helps them to enhance service provision as indicated by the results presented earlier.

**Challenges undermining library entrepreneurship ventures**

The study also required respondents to identify challenges that impeded their libraries' entrepreneurial initiatives. Responses provided were processed into the results Table 6 displays.

These results show that libraries' entrepreneurship activities faced a variety of challenges. As shown by the results, the most prominent challenges faced by libraries in this aspect is lack of financial capital to start and support viable and entrepreneurship projects as reported by 85.5% of respondents, followed by inadequacy of skills and knowledge (80%), and poor library infrastructure (70.9%). Regarding capital, one key informant stated that:

Our library lacks financial capital to venture into entrepreneurship. As a result, we are unable to introduce big entrepreneurship projects.

Apart from these challenges, the results disclose that close to half (47.3%) of respondents cited technophobia among the library staff while 40% pointed

out librarians' negative attitudes and mindset towards entrepreneurship as the other challenges public and academic libraries face in their intent to venture into entrepreneurship. These results corroborate those from interview sessions, where, in addition to the already mentioned challenges, it was noted that shortage of ICT facilities, insufficiency of space to accommodate new activities, poor facility maintenance, and out-dated infrastructure affect entrepreneurship. One of the key informants said that:

The infrastructure to support entrepreneurship activities is lacking in our libraries. You may have a great business idea but end up never implementing it because the library does not have what is needed to do so. However, this is also contributed to by the lack of readiness to support and accommodate such activities on our library management's part.

Another key informant stated that:

Every day we are witnessing the advancement of ICTs. Since libraries cannot stand aside and just watch, our library has been adopting these technologies. However, underutilization of these tools is high. Some library staff are afraid to learn new applications while others perceive ICT to be for IT personnel only. This prevents them from realizing the entrepreneurship opportunities that come with these tools.

These narratives serve as a confirmation that a variety of challenges prevent academic and public libraries from engaging in entrepreneurship activities and where they do, the challenges limit their effectiveness.

## Discussion

This study's findings suggest that library staff members at MUHAS and TLSB are aware of existing entrepreneurship opportunities at their libraries. Noting from them, photocopying, printing, Internet services, assigning ISSNs and ISBNs, binding, collection of reader membership fee are the most important alternative sources of income for the libraries. Some of these activities (photocopy and binding services, and overdue fee collection) have been considered as income-generating activities for a long time (Okiy, 2005; Rosenberg, 1997; Tilson, 1994). However, the question is, are these activities really entrepreneurship ventures? Based on the findings, it can be noted that these opportunities have not been transformed into actual entrepreneurial projects. This was evident in the extent of income generated from these activities, which was too small to cater for financial needs of the libraries. It is also important to note from previous

studies (e.g. Kirk, 2005) that entrepreneurship is not just a new hip name for longstanding and traditional practices, but an act of bringing new income in-revenue streams with innovative approach. Unfortunately, these traditional models of income generation in libraries have been found to continue to be dominant hence their continued cries regarding shrinking budgets. The libraries under study, like many other libraries, have not diversified their income generation hence their continued dependence on donors, parent institutions, and central government (see also Akporhonor, 2005; Alemna, 1994, 1998). Unfortunately, external funding is declining, leaving libraries to depend mainly on government provided funds (Alemna, 1998). This was also confirmed by Okojie (2010) who noted that governments provide about 90% of the funds used by university librarians in Africa. A majority of such libraries lack business plans and marketing strategies which results in slow transformation of conventional fee-based services into entrepreneurial projects. In all, while libraries in America and other parts of the world seem to be effectively transforming their conventional fee-based library services into actual entrepreneurship projects while also introducing new ventures (see Mapulanga, 2012), the libraries studied are not doing so.

Surprisingly, such a state exists despite the apparent staff awareness of professional entrepreneurship opportunities their libraries have. In particular, this study has revealed that digitization projects, running information literacy programmes, web-designing projects, desktop publishing, consultancy services, information brokerage, and abstracting, indexing, editing, and directory compilation are not taken as viable professional entrepreneurship activities. With such span of opportunities, it is surprising that these libraries are still struggling financially. In contrast, other studies (e.g. Vecchione, 2018; Wright, 2016) have reported that in the USA, libraries are engaging in various professional entrepreneurial activities such as copyright services, patent and trademark resources, provision of specialized business database services, and printing and digitization projects. Although aware of existing opportunities, staff members of the libraries involved in this study are a limiting factor to engagement in professional entrepreneurship because of the inadequacy of their entrepreneurship competencies. As seen earlier in the results, library staff have inadequate competencies in digitization, project management, writing business plans, fund proposal writing, system design and management, financial management, and instructional design skills. Unfortunately, this situation is unlikely to change considering that staff members of these libraries have

limited opportunities for attending training and workshops on entrepreneurship. These findings deviate from those of Idowu and Musbaudeen (2018) that reported that a majority of librarians have enough skills to venture into entrepreneurship projects. Still on competencies, the librarians' competency in marketing, computer and information literacy, and communication skills can be attributed to their education background. It is evident that entrepreneurship programmes are not fully integrated in LIS programmes as they are in business, engineering, and agricultural programmes at certificate, diploma, bachelor's and master's degree levels. This seems to indicate that viewing libraries as non-profit institutions does not just prevail but has also entered the academic mindset, hence the continued static state of LIS academic programmes (Scanlon and Crumpton, 2011). This clearly undermines libraries' possibilities of diversifying financial sources. No wonder the libraries involved in this study mainly depend on training, providing restaurant services, and letting office and business space as their main entrepreneurship activities. In addition to that, inadequate investment in ICT infrastructure and technophobia among staff at these libraries are obviously making possibilities to engage in ICT related ventures, notably digitization, automation, and other innovative projects very minimal.

This study's findings have also disclosed that in addition to competencies, personal attributes are important in determining one's involvement in entrepreneurship projects. The findings have revealed that proactiveness, innovativeness, creativity, transparency, passion, inclusive culture, collaboration, the ability to make meaningful decisions, and risk taking are important entrepreneurship attributes. Similarly, Kirk (2005) argues that proactive attitudes and actions rooted in willingness of a number of individual librarians enhance the process of venturing into entrepreneurship. Studies (e.g. Kauffman, 2013; Scanlon and Crumpton, 2018) also agree with these findings by revealing that a combination of librarians' competencies and personal characteristics increases the implementation of entrepreneurship projects.

Although limited, the income generated from the entrepreneurship ventures available plays a role in the library through enabling the acquisition of stationery, consumable goods, and other work facilities while part is used to repair library facilities, provide staff incentives, and support staff development. However, it is important to note that the income generated does not support core library functions such as acquisition of library materials, renovation of libraries, and subscription to e-resources. In other words, the income generated is not enough to trigger and support

initiatives that would lead to the improvement of library services quality. On this, Alemna (1998) concludes that poor diversification of income sources among libraries affects the quality and variety of their services. In line with this conclusion, Patel and Patel (2013) found that entrepreneurship in libraries improves existing services and supports the introduction of new ones. Similarly, Crumpton (2012) found that entrepreneurship projects in libraries offset budget woes as well as help to instil and develop entrepreneurship spirit and mindsets among librarians respectively. In all, libraries that undertake entrepreneurship projects are likely to offer more services and resources with greater quality (see for example, Kirk, 2005; Mapulanga, 2012).

## Conclusion and recommendations

Despite the known role entrepreneurship plays in the diversification of income sources, unsatisfactory entrepreneurial efforts have been noticed among the libraries studied. This is contributed to by lack of business plans, limited competencies, and financial dependence syndrome. As a result, academic and public libraries in Tanzania are likely to continue to be faced with limited financial resources. To counter that, librarians need to develop strategic plans that should be used to systematically review their institutional or organizational performances. Such plans must have clear statements on entrepreneurship and business culture that are in line with the general visions of individual libraries. Moreover, the plans must be executed effectively to ensure that library entrepreneurship becomes a reality and not just a series of statements of intent on paper. Libraries should also transform conventional fee-based services into entrepreneurship ventures by preparing business plans, introducing innovation, and effectively marketing them. Alongside this, libraries should equip their staff with skills that will be useful in turning professional entrepreneurship opportunities to effective ventures. Apart from that, the study recommends integrating entrepreneurship content into LIS programmes by either introducing standalone courses or adding components to existing courses.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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# Barriers to ideal transfer of climate change information in developing nations

International Federation of  
Library Associations and Institutions  
2019, Vol. 45(4) 334–343  
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sagepub.com/journals-permissions  
DOI: 10.1177/0340035219857751  
journals.sagepub.com/home/ifi



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## Abstract

Global climate change is one of the most pressing crises of the 21st century, with its economic impact anticipated to be in the trillions of dollars, causing major political and social upheaval. While evidenced-based research suggests means through which nations can adapt to climate change, there are tremendous barriers to this information reaching the most vulnerable populations: those who live in developing nations. An investigation of the factors contributing to these barriers identifies three broad phases in the lifecycle of information that have contributed to these unfavorable conditions: the reproduction and dissemination of information, the organization and storage of information, and the diffusion of information/knowledge. Each of these phases is described as well as potential solutions to improve the transfer of information and the effectiveness of developing nations to adapt to climate change conditions.

## Keywords

Climate change, developing countries, diffusion of knowledge, information transfer, international librarianship, policy

Submitted: 29 November 2018; Accepted: 26 May 2019.

## Introduction

Developing countries are, and will continue to be, disproportionately affected by global climate change. Developing nations (below 0.7 on the human development index) represent 40% of all nations worldwide and nearly one-third of the earth's population, but have a total pollution output of less than 3% of the global total (Huq et al., 2004). These nations will, however, experience the same challenges caused by global climate change as all other countries. Unfortunately, since developing nations typically have weaker political, economic, and information infrastructures, significant changes in policy, economy, and agriculture caused by climate change will likely devastate these nations unless efforts are made to educate the public about climate change and help strengthen infrastructures to meet new environmental challenges. While research exists that demonstrates how nations may successfully adapt to climate change, this research is presently not accessible to the broad majority of individuals within developing

nations due language, social, and infrastructure barriers. Strategies are needed to overcome these barriers to information and prevent economic and health disaster.

## What is global climate change?

Global climate change, also called global warming, is a body of evidence, causes, and solutions stemming from the systematic decrease in the earth's ozone layer and increase in levels of CO<sub>2</sub>, global average temperature, and extreme weather events. Though the cause of climate change was initially unknown, virtually all independent researchers and academic scholars agree that the emission of greenhouse gases during practices such as manufacturing, transportation, forestry, and energy production has contributed

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significantly to the development of these conditions over the past two centuries (Adger et al., 2005; Campbell-Lendrum and Corvalan, 2007; Haines et al., 2006; Mendelsohn et al., 2006; Mertz et al., 2009; United Nations, 1992). Global climate change represents a significant and worldwide economic, social, and political crisis that has the potential to impact virtually all industries and threaten public health and safety. Hundreds of millions of dollars are invested annually into the investigation of climate change and its causes and ways to reduce its impact on society and the earth. Due to the economic and social ramifications of human-caused climate change and efforts to reduce its impact, advocacy and industrial groups on both sides of the issue also spend billions of dollars each year to influence climate change policy and initiatives. These factors make global climate change a heated issue with major immediate and longitudinal impacts.

Many climate change prediction models suggest that the average annual temperature will increase two-and-a-half degrees Celsius (four-and-a-half degrees Fahrenheit) over the next four decades, and precipitation will decrease globally by 6% (Mendelsohn et al., 2006; Reid and Goldenberg, 1998). These changes vary from region to region across the globe. Asia, Africa, South America, and Western Europe are expected to see greater increases in temperature and decreases in precipitation, while North America, South Africa, Australia, and Eastern Europe are expected to see smaller increases in temperature and increases, rather than decreases, in precipitation.

Developing nations are anticipated to be the most negatively impacted by global climate change. Whereas highly developed countries (e.g. United States, Canada, Western Europe, Australia) are anticipated to have slightly-negative to moderately-positive growth in overall economy directly resulting from climate change, economists almost unanimously agree that developing countries will experience moderate-to-severe economic decline as a result of climate change (Huq et al., 2004). The difference in growth/decline in these nations stems from the type of economy by which they are characterized. Agrarian economies (where the largest industry is agriculture) and those that have a large tribal population, particularly when they are situated near the equator, are anticipated to experience economic losses as temperature and precipitation conditions change. Industrial and post-industrial nations (where manufacturing, technology, and/or management is the largest industry) are less likely to experience economic losses and may, in fact, experience gains as the new climate

conditions require adaptation to new technologies and innovative thinking.

Climate change is anticipated to have major effects on public health and safety (Campbell-Lendrum and Corvalan, 2007; Haines et al., 2006). Among the risk factors expected to increase as a result of climate change are included flooding, tsunamis, hurricanes, tornados, extreme heat/heat-stroke, air pollution, sanitation, vector-borne diseases (Malaria, West Nile), cardiovascular disease caused by lack of mobility in poor climate conditions, and malnutrition (Campbell-Lendrum and Corvalan, 2007; St Clair and Lynch, 2010; Weber and Stern, 2011). These conditions will, directly or indirectly, affect virtually all individuals living in developing nations (McSweeney et al., 2010).

Infrastructures are expected to face unparalleled strains due to climate change. Information systems, like disaster response systems and broadcast radio, are likely to play a major role in the ability of nations to adapt to climate change and respond to disasters caused by these conditions (Huq et al., 2004). Transportation and roads will take a toll from increased temperatures, which will likely ground many older planes that were not built to fly in such conditions and cause substantial cracking and wear on roads and railway lines (McSweeney et al., 2010). Increased costs for transportation will result in increased costs for agriculture and industry, causing further strain on developing economies (Mendelsohn, 2008; Mendelsohn and Dinar, 1999).

### *Social paradigms and public policy*

Global climate change planning and policy has traditionally been informed by a functionalist way of thinking, which emphasizes utility and maintenance rather than flexibility and change (Miller, 2002). This way of thinking is dominated by its emphasis on the whole rather than parts, and majorities as opposed to all. Functionalists will look to do what is best for the largest number of people and apply policy accordingly, even if it leaves some minority groups behind. Functionalism is dominant in climate change policy that seeks to impose the same punishments and strategies for combatting and adapting to climate change for all nations (Miller, 2002). These strategies are beneficial to the majority of the world's population and will help reduce the effect of climate change in large countries like the United States, China, and India, which have industrial or postindustrial economies; however, these functionalist strategies leave developing nations, with smaller and evolving economies, at tremendous disadvantage.

A philosophical shift is needed to reorient policy and planning to best serve the diverse and individual nations that share the planet. This shift should move our thinking from a functionalist perspective to a more relativistic paradigm that challenges preconceptions about variable policymaking. An interpretivist or radical humanist perspective may reframe policy decisions in a manner that considers the unique situation of each nation, adopting one set of guidelines and restrictions for more developed nations and another for developing nations (Burrell and Morgan, 1979). These new perspectives inform the strategy that follows, which targets information transfer and the diffusion of knowledge about climate change research in developing nations.

### **Adaptation to global climate change as an information issue**

Evidence-based research exists that provides guidance for how developing nations may adapt to global climate change conditions. In other words, the information has been created. This research, however, rarely reaches the academics and policymakers in developing nations, let alone the general public. There are several reasons for this inaccessibility of climate change information, each of which is discussed below. These information issues are not necessarily unique to climate change information, but given the immediate and longitudinal effects of climate change, the severity with which it has and will continue to impact global infrastructures and economies, and the incentives among certain industries (oil producers, manufacturers, etc.) to suppress climate change information and limit policy, the need to identify solutions for the transfer of climate change information is at an immediate, crisis level.

### *Reproduction and dissemination of information*

First, and most fundamentally, the research about global climate change is not produced or translated in the native languages. The vast majority of published peer-reviewed literature is written in one of seven languages: English, Spanish, French, Arabic, Hindi, and Mandarin (Miller, 2002). These works are generally not translated into other languages, unless a researcher takes on the task of doing so (which many academics do not, since it does not carry nearly the weight of original research in academic promotion and tenure review settings). In nations where none of these seven languages are spoken, access to existing research is limited. Furthermore, even in countries like India, Brazil, and Nigeria, where the majority of the high-school educated population will learn to

speak English, many individuals do not complete their education due to social and economic constraints, or lose the language due to a lack of use. India and Nigeria each have over 500 native languages and English is mainly used only by those working in commercial and academic settings. English, the language spoken in the most nations on Earth, is still only used in 101 of 196 countries worldwide and only about 20% of the world's population has a sufficient understanding of the language to understand academic writing (Miller, 2002). If the information is not available in a format that an individual can understand, then a barrier exists to information access. This situation is not dissimilar from a library system that has no audio book collections for the visually-impaired. These types of services, that produce accessible content, require significant public funding, which is often not possible in developing nations.

That information that has been translated is still often inaccessible to the inhabitants of developing nations, due to the high costs of scholarly publications and the limited budgets of many libraries, academic institutions, government organizations, and individuals (Heeks, 2002; Zanello et al., 2016). Very few academic libraries – let alone public or school libraries – in developing nations can afford a subscription to a major library database like ABI/INFORM. Students generally rely on open-access publications for research. Most climate change journals, however, do not subscribe to an open-access model, meaning that this information is not reaching these individuals (Zanello et al., 2016).

Few publishers of scholarly work take measures to ensure the dissemination of this research to academics in developing nations. The Association for Information Systems suggests a means by which this could be done while still remaining profitable as an organization, i.e. by charging higher institutional membership rates in nations with very high and high human development indices and very low membership rates (1/20 of the high-developed nations) for institutions in developing nations (Association for Information Systems, 2018). This subscription provides access through an e-library to all AIS peer-reviewed journals and books (many of which are the most prominent journals in the field). The American Library Association takes this model a step farther, with many of its peer-reviewed journals being open access to the public. These models, however, are extremely rare. The American Psychological Association charges, at minimum, \$5,795 US per year for academic institutions to provide access to its journals (American Psychological Association, 2018). This is equal to the total annual income of five full-time workers in low-

income developing countries, and only slightly less than the starting salary of a PhD-credentialed assistant professor in most developing countries (World Bank, 2018).

### *Organization, access, and preservation of information (information infrastructure)*

Developing nations often struggle to maintain a strong, consistent, and secure information infrastructure. In developing countries only about 42.9% of the population, on average, have regular access to the Internet, with only 14.7% on average for the least developed countries (bottom half) (International Telecommunications Union, 2017). Less than 50% of individuals from these nations have used the Internet before. Libraries can be scarce, particularly within rural areas of developing nations, and do not necessarily provide access to the Internet either. Budgets for libraries are often strained, which may preclude the purchase of the newest resources available. Regular access to television, radio, or newsprint is not a given within developing nations (Zanello et al., 2016). The primary means for the transmission of information is through direct communication amongst individuals. This presents barriers to access in regards to the latest research on time-critical issues like climate change, which grows in severity with each passing day that measures are not taken to reduce emissions and adapt to new environmental conditions.

Information that is collected by organizations like libraries and schools often is not properly cataloged due to a lack of time and labor resources (Ganimian and Murmane, 2016; Lund et al., 2019; Tella and Issa, 2011). This makes information retrieval a challenging endeavor and leads to frustration from the information seeker. The lay person in a developing country is extremely unlikely to come across any news about climate change, unlike in developed nations, where the knowledge is usually diffused even if it is rejected by the individual. This is true of many academic subjects, but with time-critical issues like climate change it is particularly detrimental to the ability of individuals to inform themselves and make necessary adaptations before it is too late. In recent decades, many developing nations, particularly those bordering large nations within their region like Brazil, Nigeria, Kenya, India, and China, have placed a stronger emphasis on hiring trained librarians and developing programs of library education (Tella and Issa, 2011). However, this effort has led to its own problems, with more trained librarians without jobs than with them and the librarian positions themselves often barely offering a living wage. Libraries in many developing

countries lack computers and still rely on traditional paper card catalogs to organize resources in the library.

Resources in these libraries, most of which are physical books and periodicals, are often stored in conditions that leave them exposed to quick wear and damage. The physical buildings may experience flooding, extreme heat or cold, power outages, and theft – not unlike the conditions that threaten materials in developed countries, but at a more frequent rate (Tella and Issa, 2011). These conditions present another justification for governments not to provide funding for new acquisitions. Poor organization and preservation of information, unfortunately, is often used as a rationale for not acquiring new information. Climate change will only make these damaging conditions (extreme temperatures, storms, power outages) all the more common, resulting in a spiraling effect if immediate actions are not taken to disrupt the status quo.

### *Diffusion of knowledge/information*

What is knowledge of climate change? Wolf and Moser (2011) define knowledge of climate change as the acquisition and use of information about climate change and strategies to accommodate to it. It is not sufficient to say that one knows that climate change exists, as many individuals in developing nations know it exists but lack the knowledge to do anything about it. True knowledge of climate change requires the application of information to combat or adapt to climate change conditions. This knowledge, unlike the simple awareness that climate change exists, is typically acquired only through active engagement of information. An individual can passively watch a TV show or film about climate change and be convinced that it exists, but must engage in active inquiry to understand the specific conditions of their environment and how to enact change (Wolf and Moser, 2011). Information organizations (including schools and libraries) can support this active inquiry through the process of diffusion of knowledge, a concept derived from the work of Everett Rogers (2010). Diffusion of knowledge, unlike simple dissemination, describes the process of transferring knowledge into personal action (Greer et al., 2007).

Adaptation of knowledge is closely related to the concept of diffusion. Adaptation is the process of changing an innovation/information to suit a specific context (Buttolph, 1992). While journal articles and scholarly books are excellent for the diffusion of knowledge among academics in developed nations, they are less efficient for those who do not have a

post-graduate education and the general public in developed and developing nations. In nations that already have a poor information infrastructure, presenting information only in this dense, scholarly form does no favors to diffusion. Adaptation encourages the reworking of the format in which knowledge is presented to be relevant to a new audience. In the case of individuals in developing nations, this may be revising works that were designed to describe crises in global climate change in the post-industrial world to those relevant to agrarian and industrial economies. Instead of suggesting a shift from gas-powered cars to electric cars (which would be mostly feasible in developed nations, but would not within developing countries due to cost barriers), a more sensible suggestion might be using more public transportation as opposed to personal vehicles. Instead of suggesting that 'political agents redirect advocacy towards the financing of relocation away from coastlines,' the adapted research work might read as 'everyone living on the coastline should demand funds from the government to relocate.' The second message is much easier to understand than the first and effectively communicates that the coastlines will be affected by climate change and those living on the coastlines should ask for funding from their government to move away from the coastline.

Diffusion of knowledge in developing nations is often hampered by political, social, and education crises (Chen and Hicks, 2004; Zenello et al., 2016). Fractured political systems, particularly those caught up in civil conflicts, are unable to support the diffusion or adaptation of knowledge in developing nations, or may not wish to do so based on political factors (intentionally keeping the public uninformed). The public may not trust scientists, particularly if they are from other countries and share views that conflict with religious or political beliefs. No matter how well-articulated statements are, they will not be diffused if individuals reject them based on a priori beliefs (even if that a priori belief appears completely false to an external observer). Thus, the religious and political structures within nations that might suggest, for instance, that climate change is the wrath of ancestors, will often overrule empirical findings communicated well (Zenello et al., 2016). This is a tricky issue to navigate, as preserving cultural beliefs and practices is important, but failure to diffuse this knowledge about climate change is almost certain to lead to devastating results. Education systems in developing nations may also present challenges. Most schools in developing nations do not have computers, let alone Internet access. While it is more common at universities, there is still no guarantee of consistent access

(Chen and Hick, 2004). Materials, like updated textbooks and access to scholarly journals, are often limited. Many schools may use books that are over two decades old. These materials do not make it easy for researchers and advocates to communicate new research to the public.

### *Suppression of information*

A unique challenge for the transfer of climate change information is the suppression of veracious information by industry agents who have a vested interest in having as little climate change policies and adaptation as possible – agents like energy companies and manufacturers, which tend to hold significant sway in emerging economies. These industries may be the largest employers in many countries. In adapting to climate change, through strategies that would likely affect the prosperity of these agents, individuals risk losing employment due either to necessary layoffs or retaliation. Research from the discipline of evolutionary psychology indicates that individuals will choose to satisfy immediate needs over future needs, even if satisfying immediate needs occurs to the detriment of future needs (Van den Bos and de Ridder, 2006). Overcoming this barrier to the transfer of climate change information requires demonstrating the immediate and life-altering impact of climate change and disrupting the social systems that support those entities that would suppress information at the cost of human well-being, which likely requires international collaboration as well as local political and economic changes.

### **Strengthening the transfer of information**

Without overlooking the financial, social, and political constraints that limit monumental shifts in developing nations' support of the information transfer process (e.g. investing a half-trillion dollars to provide consistent Internet access to everyone in India), strategies can be implemented that will improve individuals' access to evidence-based research about global climate change. Following the same structure as the previous section, the following section will describe practical strategies for informing individuals in developing countries about climate change adaptation by supporting the specific stages in the information transfer process.

### *Reproduction and dissemination of information*

To support the transfer of information, publishers should make an effort to work with local publishers or academic institutions in developing nations to

reproduce information resources in a language and format that can be read by the populations in these nations. There are two potential challenges that this change could face. First, there is little financial incentive to translating manuscripts that only a few academics will read into minor languages. The incentive for the publishers must not be monetary, but rather humanitarian. Having a longitudinal perspective of the future of the publication, these journals may recognize that, in creating an informed citizenry in these countries, they are promoting future academics and researchers who will contribute to their journals (Chen and Hicks, 2004). The second challenge is time, and the recruitment of translators. If nothing else was found amenable, if publishers at least made their documents easier to copy and paste from, then individuals could use online translating programs to translate the articles into a language they understand.

Journals would also be wise (for humanitarian and financial reasons) to install a sliding-scale subscription rate based on the human development index, as with AIS. This is likely to encourage new subscriptions from organizations that previously could not afford subscription, increasing financial earnings and expanding the prominence of the journal. It will also increase the number of academics in developing nations who have access to this research and will be able to help diffuse it to the population.

#### *Organization, access, and preservation of information (information infrastructure)*

Libraries in developing and developed nations may work together to solve many of the challenges those in developing nations face in regard to organization, access, and preservation of information. Programs, like those hosted by the American Library Association, to support international librarians' study (both in MLS degree programs and at annual conferences), helps to diffuse new ideas about library management and organization. Fulbright scholar programs, when taken full advantage of, allow for the exchange of ideas between library science scholars across borders. Grant projects may support the strengthening of information infrastructures and library science education in developing nations. Each of these opportunities takes a small step towards bolstering library service in developing nations; however, there are still far too few of these opportunities available. Thousands of highly-qualified individuals and libraries are championing at the bit to get the opportunity to engage in these learning and infrastructure projects, but only a select few receive the opportunity (Tella and Issa, 2011). In addition to limiting the impact of the programs, this

also places a lot of pressure on those individuals and institutions that are selected to serve as exemplars and make no errors in how they utilize their newly acquired and highly valued knowledge. Organizations, like the International Federation of Library Associations and the American Library Association should be more proactive in presenting these opportunities, seeing them as an opportunity to expand the diversity of the profession. Successful programs, like the Emerging Leaders, should be expanded to include international participants from developing nations, who stand to make the biggest contributions to the field with what they learn from the process.

Libraries in developing nations, given limited resources, should place an emphasis in acquisitions and access on information pertinent to local and global crises. While all knowledge is certainly valuable, perhaps, given the choice, subscribing to journals about climate change and health crises is more valuable than subscribing to journals of literature and arts. Again, this is not to mitigate the importance of these fields, but rather to prioritize publication subscriptions based on the immediacy of its impact on broad social, political, and economic conditions.

While there is no perfect free solution to preserving information in environments with many environmental hazards, a sensible step could be taken to preserve collections: have a disaster preparedness plan in place. Many publications written in the late-2000s described the importance of disaster preparedness plans in the context of Hurricane Katrina, which caused substantial damage to libraries throughout New Orleans, Louisiana and the surrounding areas (Featherstone et al., 2008; Jaeger et al., 2006; Skinner, 2006). In the case of a natural disaster that can be anticipated (a hurricane, long-term flooding), the total damage can be reduced by relocating the most valuable resources in the collection. By having contact information for volunteers and emergency contacts, damage can be mitigated by a quick response. Those institutions that had an emergency response plan in place before Hurricane Katrina were not fully free from the damage of the event, but were able to minimize damage. Virtually all libraries in New Orleans that did not have an emergency response plan before the hurricane put one in place soon thereafter. This disaster provides a valuable lesson for ensuring the preservation of materials in developing nations subject to similar conditions.

#### *Diffusion of knowledge/information*

Diffusion is best supported through the transformation of scholarly writing into colloquial language

(Chen and Hicks, 2004; Zenello et al., 2016). This process can be managed by academics in developing nations or counterparts in developed nations. Formats like recorded and in-person lectures/educational sessions and brief written descriptions and articles, distributed through free avenues, should be sought. Large university presses in developed nations (e.g. University of Chicago Press) may take it upon themselves to facilitate the diffusion of knowledge, or universities in developing nations with Internet access may gather enough resources to print Internet resources and distribute them throughout the surrounding region. Much of the recent research on the diffusion of knowledge has centered on the use of the Internet to communicate knowledge in formats that are approachable for the general public (Chen and Hick, 2004; Detmer and Shortlife, 1997; Siegel et al., 2003), which would, unfortunately, be a barrier to developing countries. Universities, however, may have the capacity to reproduce and disseminate Internet information and reduce the barrier for these populations. There are many resources available online that discuss climate change adaptation in easily-understood terms – such as the FAQ published by the European Commission ([https://ec.europa.eu/clima/policies/adaptation\\_en#tab-0-2](https://ec.europa.eu/clima/policies/adaptation_en#tab-0-2)) – but this information must be diffused to the population through intentional efforts (e.g. printing the FAQ and distributing it at the marketplace and urban centers where people engage in daily activities).

Communication is an important component of diffusion (Chen and Hick, 2004). Developing nations could facilitate town hall-type discussions between university scholars, scientists, and the general public that would allow the experts to share information about climate change adaptation and allow the public to ask questions or express concerns that the experts could address. The only barrier to this form of diffusion is space to host the event and encouraging participation: financial and technology barriers would not exist. Based on the large percentage of individuals in developing countries who believe climate change is occurring (up to 89%), there is a strong chance that they will be enticed to listen to strategies for adaptation, so long as the presenters are sensitive to tribal and religious beliefs that exist among some populations and are willing to communicate strategies in a way that does not offend these beliefs but encourages individuals to consider *additional* strategies to adapt along with their traditional beliefs and practices (Apata et al., 2009).

### *Participation in national and international conventions and resolutions*

Several nations and international organizations have made pledges or ratified measures to ensure public participation in climate change and environmental decisions and to guarantee that the public has access to information pertaining to environmental issues. One example is the *Aarhus Convention*, or the *United Nations Economic Commission for Europe's Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters*. The ideas outlined in this convention may be seen as an ideal for the transfer of climate change information – to ensure information equity and participation in the political process regarding environmental change – though it was not without challenges regarding the responsibilities of private companies, the enforcement mechanism, and limited participation (no nations from Africa, South America, or North America ratified the convention) (Brisman, 2013; Haklay, 2003; Mason, 2010). The convention has only had significant impact within the European Union. Nonetheless, it serves as a model by which a larger effort may be made to gain participation from the governments of developing nations across the globe.

Another example is the Rio Earth Summits of 1992 and 2012 and several of the treaties/conventions to emerge in the subsequent years pertaining to adaptation to climate change. The Earth Summits had a more global audience and, though they did not specifically focus on information access and diffusion, included elements that aimed to support the transfer of climate change information to the public (Barratt-Brown et al., 1993; Sheats, 2000). Particularly in the 2012 Summit, information took a fundamental role, as public participation in decision making was a focus of discussion (Banisar et al., 2011). These conventions have yet to bring many practical solutions to developing countries, but offer an optimistic outlook and guide for efforts that developing countries might take in ensuring information access.

### **Future research in diffusion of climate change information**

Future research in the area of diffusion of climate change information may benefit from a shift in assumptions and methodologies from the traditional functionalist paradigm, to the interpretivist or radical humanist paradigms, as discussed by Burrell and Morgan (1979). Whereas the functionalist paradigm emphasizes objectivity, positivism, generalizability, and regulation (i.e. maintaining status quo, cohesion,

and order, associated with theorists like Talcott Parsons), the interpretivist and radical humanist paradigms are more subjective, antipositivist, and focus on individuals and complexity in the social world rather than cohesion. As identified in this paper, applying the same climate change policies and strategies to all nations is ineffective. These entities need to be viewed based on their specific concerns and socio-political and environmental constraints. Often, this way of thinking is challenging for academics, particularly in developing nations and the United States, whose education systems, from primary school onward, are often dominated by functionalist ways of thinking and social structures. However, these are challenges that must be faced to attain radical change in how climate change information is diffused.

The two paradigms of interpretivism and radical humanism offer very different sets of questions, assumptions, and methodologies, but each has promise for redefining how information about climate change is diffused within developing nations. Interpretivist methodology in this context of climate change information would very likely align with phenomenological methods. By investigating the understandings and beliefs of individuals in developing nations specifically, we may be able to continue to improve how knowledge is diffused among these populations, enabling the design of more efficient communication and information systems. By understanding the individual in these nations, rather than attempting to view societies as homogenous entities, services and strategies become better tailored to the populations for which they are designed. Interpretivism has made some headway in existing foreign policy efforts, including within the European Union (Bollen, 2018). This interpretivist form of thought is the same that, to a large extent, influenced the evolution, or reorientation, of librarianship as a service profession in the second-half of the 20th century in many nations around the world.

Radical humanism, as described by Burrell and Morgan (1979), is similar to interpretivism in many of its assumptions about social experience, but more actively opposes the social structures currently in place. Radical humanist thought might be associated with anarchic or existentialist thought, whereas interpretivism perhaps aligns more with liberalization and inclusion. Radical humanists, then, might question the legitimacy of existing policy-making organizations in redefining policy to support developing nations. They may look to form completely new organizations that would challenge the dominance of the United Nations by the 'major world powers.' For that matter, they may question the need

for such organizations whatsoever, suggesting that the very nature of these organizations will always favor the powerful and majority and leave others behind. Solutions to the diffusion of information about global climate change, then, may be centered on the actions of individual agents rather than reliance on organizations and alliances.

Either of these two paradigms offers a needed departure from the functionalist thinking that has contributed to many of the current problems with the transfer of information in developing nations and offered few practical solutions. Researchers in 'developing' and 'developed' nations alike would be well-suited to consider these approaches in investigating new understandings and strategies of the transfer of information and climate change adaptation.

## Conclusion

While global climate change poses a major challenge for all nations, evidence-based research and theory suggests means for individuals and societies to adapt to the new conditions without many of the negative consequences currently anticipated to befall them. In developed countries, many of these strategies are already being implemented in government, industry, and among individuals and communities. In developing countries, however, very little of this knowledge has made it to the public policymakers, let alone industry and the general public. This has left developing countries, already disadvantaged economically, falling further behind developed nations. Serious social, political, economic, and health issues are expected to result from this climate change crisis if developing countries are not able to adapt. Intervention is needed to overcome barriers in information transfer and create informed academics, politicians, and citizens in developing nations so that they may prepare for the changing world. Libraries in the developed and developing world can collaborate to create low-cost solution for improving the recording, organization and storage, and diffusion of knowledge throughout populations that will save lives.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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### Author biography

**Brady Lund** is a doctoral student of Library and Information Management at Emporia State University, Emporia, Kansas, United States. He has employment experience in both public and academic libraries and has collaborated with researchers and professionals across the globe – particularly in Nigeria, and western Africa, and East Asia. His research interests primarily focus on international librarianship and collaboration, information technology and instruction in libraries, and information systems.



# School librarians in Sweden: A case study in change

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International Federation of  
Library Associations and Institutions  
2019, Vol. 45(4) 344–352  
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DOI: 10.1177/0340035219845018  
journals.sagepub.com/home/ifi



## Abstract

This study reveals the complexities and dynamics of law, governance, and practice that have impacted school libraries in Sweden. The Education Act of 2010 and the Swedish Library Act of 2013, which mandated school libraries, did not address staffing, and that loophole has been given recent attention, especially in light of national curriculum changes and librarian shortages. The University of Borås's School of Library and Information Science is the largest, leading institution within Sweden for preparing professional librarians. Their school librarianship faculty is in the process of changing its curriculum. This paper explains the school librarianship situation in Sweden as a case study of a change process in the profession.

## Keywords

Change process, curriculum, school librarians, school libraries, Sweden

Submitted: 13 December 2018; Accepted: 28 March 2019.

## Introduction

Laws and regulations about Swedish school libraries have a fairly recent history. The Education Act of 2010 made the school library mandatory, and the Swedish Library Act of 2013 further stipulated that all students should have access to school libraries (Barret et al., 2011; Hell, 2014). The 2017 national curriculum strengthened the need for media and information literacy, which are staple subjects for school librarians. However, a report by the Skolinspektionen (School Inspectorate) (2018) documented the reality: that several schools might share one collection or be served by an integrated public-school library, and that only half the students in Sweden have access to a school library that has at least half-time staffing. More trained school librarians are needed. All of these factors reflect Sweden's changing picture relative to school librarians and their staffing.

On the training side, five Swedish universities offer librarianship programs. With its 70 faculty members and hundreds of students, the University of Borås's School of Library and Information Science (UBS-SLIS) is the largest, leading institution within Sweden for preparing professional librarians, and offers their program in English. The school librarianship program

is in the process of changing its curriculum, and I was able to collaborate with them in this effort. This paper explains the dynamic school librarianship situation in Sweden as a case study of a change process in the profession.

## Background

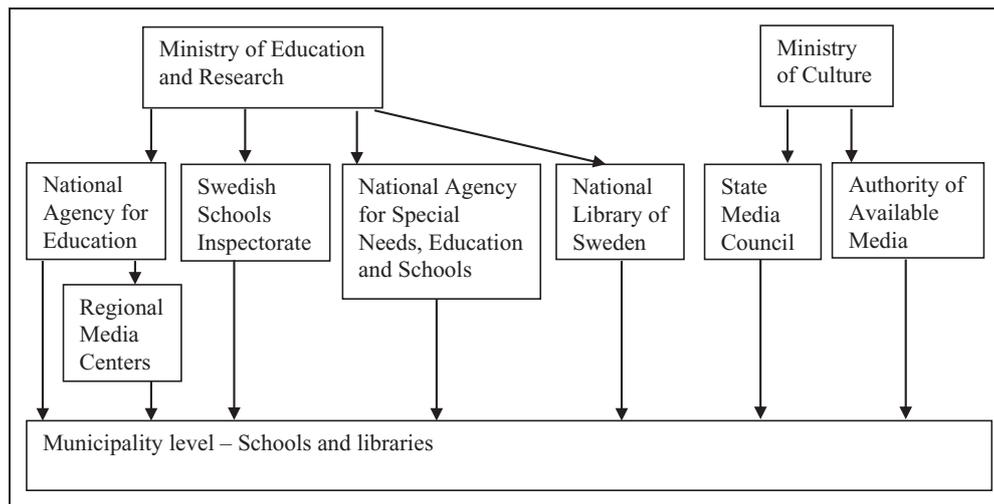
### *Education overview*

The Swedish school system consists of several levels of education: from optional free preschool (förskola) starting at age 1 to adult school. Schooling is required from grades 1 (usually age 7) through 9 (grundskola): divided into lågstadiet (years 1–3), mellanstadiet (years 4–6) and högstadiet (years 7–9). Most students attend three more years of school (gymnasium), which prepares them for the university or trade. Post-secondary schooling is also free, but university acceptance is competitive by grades and national examination. Schooling must provide Sami (Lapland)

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**Figure 1.** Legal entities governing school libraries.

language instruction as needed, and must educate newcomers of all languages. School libraries should provide materials in those languages as appropriate. There are about 5000 *grundskola* and 1.34 million students, of which about 27% are immigrants.

The Swedish Ministry of Education and Research oversees the Swedish school system. The ministry delegates more specific oversight to the National Agency for Education, the Swedish School Inspectorate, and the National Agency for Special Needs, Education and School. is governed by several agencies. However, most decisions are made at the municipality level, including library services.

### School libraries

Sweden has about 4000 school libraries, which are funded and managed by local authorities. The first national library law did not exist until 1996 with the Act on Library Services, which focused on public libraries. For years, school libraries had been ignored by the school community and the Swedish Government. Many library associations lobbied for legislation that would support school libraries, and the National Authority for School Improvement funded pilot school library development. As a result, the Education Act of 2010 made the school library mandatory (Barrett et al., 2011). The Swedish Library Act of 2013 further stipulated that all students should have access to school libraries (Ranemo, 2017). According to the library act, the library system “aims to promote the development of democratic society by contributing to the dissemination of knowledge and freedom of opinion.” The library service should also “promote the position of literature and the interest in education, enlightenment, education and research, as well as cultural activities in general.” Additionally, the Swedish

curriculum was revised in 2017 to strengthen digital competence, and school librarians are responsible for supporting and empowering students in their linguistic and digital skills.

However, the reality is that several schools might share one collection or be served by an integrated public-school library, and about half of the students in Sweden have access to a school library that has at least half-time staffing; one-third have no access to a school library.

Organizationally, school librarian governance has changed hands recently. School libraries are governed by the school law and the library law, as Figure 1 shows.

The National Library of Sweden (*Kungliga biblioteket*) is now the agency responsible for coordinating support for all libraries; it maintains library statistics, maintains a common catalog, and promotes school libraries, but it has no authority to see that legislation is complied with. Its strategic plan (National Library, 2018a) asserted that librarians need to start by examining user needs and behaviors, and then identify effective library functions.

The Swedish National Agency for Education (*Skolverket*) oversees staff regulations, and has a reference group for school library public relations. It also oversees regional media centers, which serve as educational resources for municipal schools; these centers provide several kinds of services for school librarians, including helping school librarians develop libraries and their own competence. Some centers provide other educational supports for information technology, multimedia, subject-specific support (e.g. interactive map of Stockholm’s history – <https://stockholmskallan.stockholm.se/>), special education, multi-language education, and health.

The National Schools Inspectorate (Skolinspektionen, 2018) inspects schools, including school libraries. According to the inspectorate:

- Students have access to a school library at their own school premises or at a reasonable distance from the school, which enables continuous use of the library as part of their students' education to help achieve the goals.
- The library includes books, fiction and non-fiction, information technology and other media.
- The library is adapted to students' needs to promote language development and stimulate reading.
- The school library is used as part of the teaching to strengthen students' linguistic abilities and digital skills as well as support in the student's learning and development.

The Ministry of Culture helps buy literature for school libraries, and the Authority of Available Media deals with accessibility issues.

The State Media Council oversees media and information literacy. The Government's national digitization strategy for the Swedish school system states that:

in order for children and pupils to develop as far as possible, it is also important for good cooperation between staff working with children and students and school libraries. The school library has an important pedagogical task to complement when it comes to strengthening student skills in information retrieval and source literature. (Regeringen, 2017: 8)

Several professional organizations also impact school libraries. The Swedish Library Association networks, publishes, and advocates. Skolbibliotek Vaste and Öst are regional school librarian professional organizations, who facilitate networking and professional development. DIK (Documentation, Information, and Culture) is a trade union for Library and Information Science (LIS) graduates and other academic professions.

### *Educational assessment*

As entities within educational institutions, school libraries are assessed by the National Schools Inspectorate. The Inspectorate and the Swedish Government as a whole have themselves been assessed by international agencies. Specifically, in 2011 the Organization for Economic Cooperation and Development (OECD) gave the Swedish Government a mixed grade for its educational assessment practices. On the positive

side, Sweden's assessment framework was considered balanced and result-oriented, data were transparently monitored and reported, feedback was well used, and assessment built on teacher professionalism. On the negative side, assessment planning and management were not strategic, some assessment elements and their measurement were not clear, teacher training for assessment skills was limited – and teacher grading was unequitable. OECD recommended clarity of goals, support for effective assessment practice, more reliable monitoring, national professional standards for – and appraisal of – teachers.

As part of their response to the OECD report, recent Swedish Government efforts show improvement in their assessing the state of school libraries. However, the findings also indirectly revealed the complications of decentralized library planning and oversight. As evidence, the National Library's (2015) report on the school library aspect of library planning pointed out the difficulties of municipal level planning, which is the level basis for planning. The report noted that only a quarter of these municipal plans identified school libraries at all, largely because of the levels of administration. Furthermore, no clear guidelines exist, even though collaboration between school and public libraries would benefit students.

Another approach to assessment focuses on student learning, which can involve school libraries. A report from the Swedish School Inspectorate (Skolinspektionen, 2018) examined middle schoolers' ability to "critically search, review and evaluate information in digital and other sources" (p. 5), and found them lacking in such skills, even though most youth use the Internet. Their audit found that information searching needs to be more comprehensively taught, and source criticism needs to be updated to include digital media or images. The audit also indicated that instructors who did not teach these skills did not cooperate with a school librarian, even though these concepts play to school librarians' strengths.

Skolverket (2017a) identified the main priorities to address school libraries' situation. The organization asserted that when school libraries are integrated into the school's activities, school librarians collaborate with the school community, and the principal has a long-term plan for school library activities, then school library programs can effectively impact student success. Currently, however, school librarians are not interacting enough with the school staff, largely because of ignorance about school library functions and lack of principal leadership-based support. To add to the issue, school libraries are weakly regulated. Secondly, more people need to be trained as school librarians. Gärdén's 2017 synthesis of

research between 2010 and 2015 on school libraries, focusing on the Swedish system, aligned with the Skolveret's study. A former lecturer at the University of Borås, Gärdén also noted the need for more studies, particularly ones that have larger populations and are more rigorous and generalizable.

The lack of collaboration reveals itself in terms of curriculum. School librarians view the curriculum in terms of supporting resources, as an opportunity for partnering, as a venue for teaching how to evaluate resources, as a means to incorporate fiction, and as a way to help define their profession. Barriers to curriculum-based collaboration include lack of time, lack of knowledge and availability, and lack of setting goals around school library activities. (Schedvin, 2017).

One area for possible collaboration is reading, which is a nationally legislated school library function. The library should be stocked with a rich collection of developmentally-appropriate and attractive reading materials that address students' interests and needs so students have many options to choose from. Non-Swedish materials should be available for associated students. The library should also collect non-print multimedia and digital formats of information; these resources support media and digital literacy, which is another curricular high priority – and opportunity for school librarians to collaborate from an expert position. The library itself should offer a welcoming and stimulating reading environment for individual reading and group sharing of reading experiences. The school librarian brings content and learning knowledge by collecting and organizing appropriate materials, guiding students in their reading habits, instructing students about information and media literacy, and promoting a reading culture.

In sum, these assessments reveal the need for more explicit planning, collaboration, and monitoring of school libraries. The assessment recommendations also point to the valuable role and responsibilities of school libraries, and suggest ways to carry out those duties.

### *School librarians*

In order to provide high-quality school library programs of resources and services, well-trained school librarians must direct those efforts. However, the qualifications of Swedish school librarians remain challenging. No national qualifications for school librarians exist on the part of the Government, librarian preparation programs, or Swedish professional organizations. Currently, principals decide if a person is qualified, largely because school libraries are

governed and financed locally. Studies found that principals often do not know what school librarians can do, and tend to prioritize an unmanned library rather than a school librarian (Skolinspektionen, 2018).

With the support of the University of Borås, Limberg and Lundh (2013) edited a book describing the roles of school libraries in 2013. They questioned the school library's mission relative to reading, education, and relations with public libraries. They determined that the school library's tasks focused on two main areas: support and stimuli for reading and language development, and teaching different dimensions of information retrieval and use.

A study by the National Library (2015) identified typical school librarian duties, and mapped nine pedagogical functions: teaching information retrieval, teaching source evaluation, promoting reading, reader's advisory, helping students choose materials for school assignments, giving special efforts for students with reading difficulties, planning instruction with teachers, planning media purchases with teachers, lending media remotely. Almost all school librarians reported that they helped students find developmentally-appropriate reading and ordered media: 62% trained students in evaluating resources, 68% participated in teacher training, and several school libraries stated that they also acted as IT managers, ICT educators and specialist teachers.

Curriculum guidelines for grades 1 through 9 were revised by the Swedish Ministry of Education (2017), which strengthened the emphasis on critical thinking, language arts, information and media literacy, and technology. For instance, the introduction asserted that:

Students should be able to orientate and act in a complex reality with the great flow of information, digitalization and rapid change rate. Studying skills and methods to make use of and use new knowledge are becoming important. It is also necessary that the pupils develop their ability to critically review information, facts and arguments, and to understand the consequences of different alternatives. (p. 109)

Furthermore,

The school will help students develop an understanding of how digitization affects the individual and the development of society. All students should be given the opportunity to develop their ability to use digital technology. They will also be given the opportunity to develop a critical and responsible pre-emptive kit for digital technology, in order to see information's potentials and prime risks.

The curriculum continues to be refined.

In 2017 the National Agency for Education was delegated to determine what school librarian skills and library functions contribute the most to the quality of education. The report made several recommendations: to clarify the law about school libraries and staffing, strengthen school library activities within the national school development program, inform the school community about the importance of school librarians, increase school librarians' competence, and provide short-term funding to hire school librarians (Sweden School Libraries National Agency for Education, 2018). Already, in 2018 the National Schools Inspectorate facilitated staffing by providing training for principals about the value and oversight of school libraries. The 2018 national revised curriculum also clarified the role of school libraries as part of teaching.

In 2017 the Government granted three million kronor (about US\$330,000) to stimulate staffing of school libraries, and in 2018 the Government again proposed adding funding to close the equity gap between schools who have staffed libraries and those who do not. However, many schools have no luck in finding and recruiting skills-trained school librarians (Skolverket, 2017b).

These recent reports have been published in printed and digital formats, and have been disseminated through government agencies and professional organizations. As an example, the National Library sponsored a regional meeting in Sundsvall to discuss future school library initiatives. Representatives from both the Skolverket and Skolinspektionen talked about the school library's curricular role, and school librarians shared their efforts in this role, especially for collaborating and infusing media and information literacy. Such efforts help to make librarians and administrators aware of school library assessments and needs, as well as models for positive change.

### *Librarian preparation*

The need for trained school librarians is apparent, but formal academic preparation to prepare professional school librarians seriously lags. Swedish universities with librarianship programs include Borås, Linneaus, Lund, Umea, and Uppsala. A report underwritten by the National Library (2018b) focused on library science as a profession, and addressed education and research. The report pointed out the need for professional librarians, and noted the general consensus about the librarianship programs as to professional competencies. Nevertheless, they recommended more coordination and a single national structure for

continuous professional development. Unfortunately, the report barely mentioned school librarianship.

Sweden's post-secondary librarian preparation exists at three degree levels: Bachelor's, Master's, and Doctorate. The Bachelor's degree is usually 180 EU credits, which translates into three years full time. This degree is usually the entry point for public librarians, but may be the baseline for school librarians as well. The Master's degree (typically 120 EU units) is the preferred level for most professional library positions as it is in the US, including for school librarians. Pedagogy plays a minor role in the curriculum, so school and academic librarians are often not prepared to instruct or develop the curriculum. Doctoral students usually become academic faculty or researchers, and some become administrators. Classroom teachers are required to be certificated; some of them who become school librarians earn a Library Science Master's degree, others take extended education courses (Borås offers four such courses, and is the leader in school librarianship), while others work in the school library without any library preparation or prior experience.

## **Borås Högskolan School of Library and Information Science**

### *Overview*

With its 70 faculty members and hundreds of students, the University of Borås's School of Library and Information Science (UBSSLIS) is the largest, leading institution within Sweden for preparing professional librarians at the Bachelor's, Master's and Doctorate level. UBSSLIS offers a Bachelor's degree in Library Science, a campus-based Master's degree in Library Science (Culture, information and communication), and a distance-based Master's degree in Library Science (Digital library and information services). Some courses are delivered in English. The school exists within the Faculty of Library, Information, Education and IT, so offers courses in related fields that are more pedagogical or technical. Twenty faculty members teach courses that prepare school librarians. No other Swedish university specifically prepares school librarians.

UBSSLIS programs overall seem strongest in information practice; that is, theories about information behavior and its context. Källkritik (source evaluation) is particularly emphasized. Courses tend to focus on theory, and may include some applications; pre- and in-service school librarians typically want a greater emphasis on practice. Likewise, most of the research takes a more theoretical approach to library and information issues, and seldom deals with school

librarians or makes recommendation for practical application. Furthermore, most of the school librarianship faculty are not researchers.

### *Curriculum development and delivery*

UBSSLIS develops and maintains the curriculum in a distinctive way. The UBSSLIS faculty meet yearly for two days in late October to schedule the following spring and fall courses. They also have a retreat to work on curriculum issues; at this event I gave a workshop on optimizing student engagement. Courses are usually set in order for a three-year plan, with electives offered yearly. Most school library courses last five weeks, and distance students generally take one course at a time. Online courses may include a face-to-face orientation or not. Face-to-face courses usually include lectures and hands-on workshops (e.g. Internet searching). Course coordinators have the freedom to decide how many face-to-face contact hours to provide as well as how to time them (which can range from two to three times in a week to one to two weeks of independent work).

The school librarianship faculty need to overhaul their program by 2020, which adds to the picture of change processes in Swedish school libraries, which I was studying. For starters, the faculty and I discussed lengthening their courses to two months instead of five weeks, which is the current norm; this approach gives more time for students to reflect on their learning and show progress within that course. I shared a 2004 study of mine (Farmer, 2004) which showed that it took about two months for students to grasp the main concepts and be able to apply them. Some faculty were concerned that lengthening the time would result in fewer courses, thus making it harder to show progress, but we talked about the fact that progress can be measured within a course, and that the final exam can also measure progress. In the end, the faculty agreed to offer the lengthier courses in the future.

The faculty and I also discussed how elective courses were handled for students who want to become school librarians. Two school librarian courses are offered as electives in the on-campus program: "Using ICT in Educational Library Services" and "School Libraries: Function and Activities." The course "Information Literacy and Learning" is required for the on-campus program and is an elective for the distance program. The following courses are for in-service teachers and librarians to develop their competence and skills: "Role of School Librarians in Learning Environments," "Media and Information Literacy in Education," "Promoting Literature in the

School Library," and "Information Seeking and Critical Thinking in Educational Contexts." The school library faculty try to offer courses that do not overlap programs to preserve the uniqueness of each program. However, this approach results in many course preparations and possible disservice to the students. I recommended that the same courses be taught for the face-to-face, distance, and practitioner programs, which would again streamline the curriculum and make it more equitable – as well as optimize the program's alignment with the national reports and recommendations for school librarianship preparation.

Especially with the national curriculum emphasis on school librarians' role in teaching media and information literacy, the school librarianship faculty could expand content on media literacy and on instructional design; many pre-service school librarians have no teaching background so the latter subject is crucial for them. It should also be noted that the school librarian program has tried to collaborate with the teacher preparation program, and is beginning to see the fruits of their efforts. Such interaction benefits both programs, and facilitates in-service collaboration. I had suggested a new course to address media literacy and pedagogy and found out that one of the school librarianship faculty members had just created a similar one to that which I had suggested, so it was a confirmation for all of us. Nevertheless, the person who created that course may use my ideas to polish her course.

Currently, students are free to choose electives, but since they have no assigned program advisors, they might not think strategically or know the best courses to take. To optimize their preparation, I suggested that career pathways be developed, focusing on school librarianship. I also suggested assigning students an advisor, which would provide consistent guidance and an opportunity for faculty to get to know their students better. Based on my literature review and discussions with school librarians, I developed a proposal for three educational pathways for school librarianship preparation, with a baseline requirement of a Bachelor's degree.

I also suggested a 60-unit "course package" for credentialed school teachers that would enable them to serve as school librarians (being clear that they cannot function as a professional librarian in other library settings as the number of units is at least half the number for a degree). I talked with school librarian practitioners and consultants in three areas of Sweden, and they all liked the idea. Especially with the national pronouncement of the need for more school librarians, the program faculty have already talked with school librarians about an ideal curriculum, and recognize the need to reach out to school

classroom teachers. They liked the idea of a course “package” for existing classroom teachers instead of a credential since the latter does not exist and a new program is very difficult to create. Over a decade ago they had offered a similar kind of course package, which was popular, so they thought that a new round of course packaging would be useful now, especially as principals-rectors are being trained about the need to support school libraries.

During their annual retreat the school librarian faculty mapped their ideal curriculum, based on their thoughts about the competencies needed to school librarians to be adequately prepared. This two-day brainstorming exercise started their thinking about curriculum redesign. Their next step will be to refine their curriculum by mapping onto it the national recommendations for school librarian functions and their competencies to implement those functions. They will also survey the field about needed content knowledge and skills, and test the idea of a course package targeted to classroom teachers.

### Linking Sweden’s school librarian situation to change theory

The situation that Sweden’s school librarians are experiencing reflects Schwartz and Ewald’s (1968: 454) definition of change: “a never ending processes of readjustment and readaptation, as man responds behaviorally to ever changing circumstances.” Those researchers also asserted that change may be internal or external, which certainly mirrors Sweden’s action. External factors include societal and technological changes that require heightened media and information literacy, which resulted in changed legislation and curriculum (Regeringen, 2017). Both levels of external changes required changes in school librarians’ functions and their preparation. Ultimately, these external changes urge school librarians’ internalized changes.

Ely (1999) identified environmental catalysts for change. How those catalysts apply to Sweden’s situation are noted in italics, based on the evidence mentioned above.

- Dissatisfaction with the status quo: lack of school librarians and uneven school library provisions, students’ lack of media and information literacy;
- Sufficient knowledge and skills in order to accomplish the change: *university courses and professional development opportunities*;
- Availability of resources: *government fiscal support, training*;

- Availability of time: *may be problematic for scheduling time during school and for training*;
- Rewards or incentives to engage people to change: *government fiscal support, free and lost-cost training, government inspections*;
- Participation in decision-making: *government advisory groups, professional organization events, faculty-based curriculum development*;
- Commitment to change: *library program revisions, national curriculum revisions, government inspections*;
- Leadership of expectations, commitment, and support: *ministry, agency, professional organization, and university efforts*.

Looking at these catalysts, it seems that positive change for school librarians has begun. However, several obstacles to change exist:

- No national qualifications or credentials for school librarians;
- Tension between a national mandate and local decision-making;
- No sustained funding stream for school librarians;
- Insufficient systematic school librarian training.

Havelock and Zlotolow (1995) identified stage-specific activities for change to occur. Each step can be applied to Sweden’s situation, shown in italics and evidenced in the above discussion.

1. Raise awareness: Sweden’s governmental agencies have published several reports, which they are sharing in print and online, at conferences and other venues. The agencies need to reach the general public and potential school librarians more.
2. Garner interest of principals, local government, and potential school librarians: Sweden is requiring principals to be trained about school libraries and school librarians; local government (municipalities) are being audited more closely about school library programs; revised curriculum now requires media and information literacy, which school librarians are prepared to teach. School library educators need to speak to undergraduate students and pre-service teachers about the benefits of school librarianship.
3. Demonstrate school librarians’ impact: DIK identifies world class school libraries; decision makers, students and the general public need to see model school librarians in action.

Principals need to see how school librarians can benefit them and their school community. Researchers need to compare schools with and without librarians, taking into consideration the quality of those librarians' efforts, to make a strong case for qualified school librarians' contribution to student achievement

4. Train decision-makers and potential school librarians: Principals and other decision-makers need to be trained to identify and supervise qualified school librarians, and universities need to train school librarians. National government needs to establish baseline professional competencies and qualifications for school librarians.
5. Help decision-makers and new school librarians: National government gives money to fund school librarians, and subsidizes school librarian academic preparation. Regional media centers provide just-in-time support. National government and universities could help decision-makers and school librarians gather evidence to show their impact.
6. Nurture the change: Auditors could incentivize schools who hire and use qualified school librarians collaboratively and effectively. National government agencies could develop a database and network to share best practices and facilitate peer support.

Getting all those variables aligned and coordinated systematically seems daunting, but prior work to enact existing laws does give hope that these next steps for positive change will happen.

UBSSLIS may be considered as a case study to explore how change theory is manifested at the micro level. Specifically, UBSSLIS school library faculty are deeply involved in school librarianship change. They are aware of current reports about school libraries, and have even helped develop those reports or conducted associated research. They have been mandated to revise their curriculum, and have made a commitment to curricular and delivery changes to better prepare their students. They are also considering expansion of their program to recruit classroom teachers into the profession. These changes have been facilitated and supported by the school's leadership, regular faculty meetings, professional development workshops, interactions with professional library associations and relevant government agencies; I have participated in several of these efforts. Furthermore, decisions are being made in a collaborative and consensus model that involves all school library faculty members.

## Conclusions

This case study reveals the complexities and dynamics of law, governance, and practice that have impacted school libraries in Sweden and call for substantive change. The Education Act of 2010 and the Swedish Library Act of 2013, which mandated school libraries, was the result of years of coordinated and sustained advocacy. Yet these acts did not address staffing issues, and that loophole has been given recent attention, especially in light of librarian shortages. To this day, no list of required qualifications exists for school librarians, and no credential for them exists either.

Preparing school librarians has lagged behind the regulations. Certainly, curriculum revisions can take years. In the meantime, Borås's school librarianship faculty have been offering professional development extension courses. Regional media centers provide continuing education training, and try to help local school librarians develop their site libraries. Professional organizations hold occasional mini-conferences to inform school librarians about recent developments and to showcase beneficial practices.

At the same time that school librarians and library educators shake their heads about the need for school librarians – and the uneven quality of current staff – those same professionals are creatively engaging their educational communities with innovative, meaningful learning activities and quality collections. Site school librarians, library educators, and supporting government personnel are on the lookout for relevant resources and initiating projects to improve school library programs.

UBSSLIS's school library program provides a rich case study to investigate how changes in Sweden's school libraries may take place. This concrete example shows how legislation can identify needs and provide goals, but that to attain those goals, institutions and groups need to provide the supporting structures and content through incentivized commitment.

In the midst of changing dynamics, it can be difficult to find equilibrium, but school librarians and faculty do not seem to be panicking. Rather they are working at a scale that they are comfortable with. Some efforts are deployed quickly on the national level, such as workshops for principals to become more aware and knowledgeable about school library functions and needs. Other tasks, such as establishing qualification baselines and credentialing school librarians, may require greater incentive to make the effort. Many structures are in place but need systematic coordination in order to insure high-quality school library service for every student.

In sum, school librarianship in Sweden, and specifically at the University of Borås School of Library and Information Science, can serve as a microcosm case study to see the factors and dynamics of change and how to deal with such change.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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### Author biography

**Dr Lesley S. J. Farmer**, Professor at California State University (CSU) Long Beach, coordinates the Librarianship program, and was named as the university's Outstanding Professor. She also manages the CSU ICT Literacy Project. She earned her MS in Library Science at the University of North Carolina Chapel Hill, and received her doctorate in Adult Education from Temple University. Dr Farmer chaired the IFLA's School Libraries Section, and is a Fulbright scholar. A frequent presenter and writer for the profession, she has won several national and international professional library awards. Dr Farmer's research interests include digital citizenship, information literacy, and data analytics. Her most recent books are *Library Improvement through Data Analytics* (ALA, 2016) and *Managing the Successful School Library* (ALA, 2017).

## Abstracts

### قُتَطَفَات

#### Predatory publishing and the Ghana experience: A call to action

النشر المفترس وتجربة غانا: دعوة للعمل

كودجو إلولو أتيسو أتيسو، جينا كريمير، جيني بوسالير

مجلة الإفلا 4-45،

نبذة مختصرة:

من المرجح أن ينشر الباحثون في البلدان النامية في المجلات الوهمية (شيا وأخرون 2015). تبحث هذه الدراسة في فهم علماء الأبحاث في غانا، وهي دولة نامية، حول المجلات المفترسة والوهمية وممارسات النشر الخاصة بهم. باستخدام نهج الأساليب المختلطة، سُئل علماء الأبحاث ضمن مجموعة واحدة من المنظمات البحثية في غانا عن معرفتهم بخصائص المجلات الاستغلالية على أساس خبرتهم الخاصة كباحثين. كما تم فحص منشوراتهم. وتشير النتائج إلى أن معظم العلماء الباحثين في هذه الدراسة على دراية بالمجلات الاستغلالية وغالبًا ما يتم حثهم على التعامل معها، ولكنهم أقل دراية بالأدوات التي يمكنهم استخدامها لتحديد جودة منشور معين. بالإضافة إلى ذلك، يمكن اعتبار 12% من المقالات المنشورة التي تشكل 24% من المجلات الفريدة التي نشرها هؤلاء الباحثون "وهمية أو مفترسة". إن نتائج هذا البحث مهمة لأنها تشير إلى أن العلماء الباحثين قد يكون لديهم وعي أكبر بالمجال الاستغلالية أكثر مما هو متوقع، لكن قد يفتقرون إلى التدريب أو الأدوات اللازمة لتحديد ما إذا كانت المجلة شرعية أم لا.

#### An examination of IFLA and Data Science Association ethical codes

بحث في الميثاق الأخلاقي للإفلا وجمعية علوم البيانات

شيريل تريبانير، توني ساميك، علي شيري

مجلة الإفلا 4-45،

نبذة مختصرة:

تقارن هذه الورقة ميثاق أخلاقيات الاتحاد الدولي لجمعيات ومؤسسات المكتبات لعام 2012 الخاصة بأمناء المكتبات وغيرهم من العاملين في مجال المعلومات من جهة، وقانون السلوك المهني لجمعية بيانات المعلومات لعام 2013 من جهة أخرى. وتناقش الورقة الفصل بين الاعتبارات ذات الصلة التي قد تعزز الفهم العملي للأثر المترتبة على أخلاقيات الممارسات المهنية في مجالي المكتبات والمعلومات. تحذر هذه الورقة من الدمج بين الإطار الأخلاقي لعالم البيانات مع أخلاقيات أمين المكتبة التقليدية، كما تدعو

تطوير إطار أكثر قوة لأخلاقيات المكتبات والمعلومات وإطار عمل أكثر شمولاً للتفكير في أخلاقيات البيانات وتصورها.

#### The literate environment in Kenya: Re-conceptualizing the value of text

بيئة القراءة والكتابة في كينيا: إعادة تصور قيمة النص

بروك شانون

مجلة الإفلا 4-45،

نبذة مختصرة:

إن تعريف ثقافة القراءة هو تقدير المجتمع للقراءة خارج إطار التعليم. يُعد تحويل التركيز من ثقافة القراءة إلى بيئة القراءة والكتابة، والتي تضم جميع الطرق التي يتفاعل بها الأشخاص مع النص في حياتهم اليومية، طريقة بديلة لاستيعاب قيمة الكلمة المكتوبة. تبحث هذه الدراسة في مدى وجود بيئة القراءة والكتابة، التي تشمل ثقافة القراءة، في كينيا. تم الحصول على البيانات من دراسة استكشافية للممارسات المعلوماتية للنساء الملتحقات بالجامعات في كينيا. أظهرت النتائج أن بيئة القراءة والكتابة موجودة وممتدة خارج الحرم الجامعي. وعلى الرغم من عدم تعميمها على نطاق واسع، إلا أن الدليل على وجود ثقافة القراءة كان واضحًا أيضًا. توضح هذه الحالة كيف يوفر تقييم بيئة القراءة والكتابة فهمًا أوسع لكيفية تعامل الأشخاص مع نص قد يتجاهله الآخرون. ويؤدي هذا المفهوم الأوسع إلى استراتيجيات أفضل لتعزيز التواصل مع النص.

#### Knowledge Management Practice in South Asian Higher Education Institutions

ممارسة إدارة المعرفة في مؤسسات التعليم العالي بجنوب آسيا

صايمه كانوال، ميغيل بابتيستا نونيس، محمد عارف

مجلة الإفلا 4-45،

نبذة مختصرة:

يهدف البحث المذكور في هذه الورقة إلى استكشاف البحوث حول إدارة المعرفة في مؤسسات التعليم العالي في دول جنوب آسيا. تم إجراء مراجعة منهجية للنصوص لتحديد واختيار واسترداد النصوص العلمية ذات الصلة، وذلك باتباع بروتوكول مفصل واستراتيجية منهجية لاستخراج البيانات. أظهرت نتائج الدراسة أنه تم إجراء بحث محدود على إدارة المعرفة في سياق مؤسسات التعليم العالي في كل من الجوانب النظرية والتطبيقات العملية، مما يدل على ضرورة إجراء

## مجلة الإفلا 45-4،

نبذة مختصرة:

المزيد من البحوث في هذا المجال. وكشفت النتائج أيضًا أن هناك عوامل متعددة تؤثر على ممارسات إدارة المعرفة بين وكلاء التعليم العالي الأساسيين: أعضاء هيئة التدريس والموظفين الإداريين وخبراء المعلومات. نتيجة لتحليل نتائج مراجعة النصوص، يُقترح إطار عمل مفاهيمي، وذلك ليوفر أساسًا جيدًا للبحوث المستقبلية ويمهد الطريق نحو المزيد من تطبيقات إدارة المعارف الناجحة في مؤسسات التعليم العالي في جنوب آسيا وخارجها.

### Entrepreneurial opportunities: A roadmap for diversifying financial sources in libraries, Tanzania

فرص ريادة الأعمال: خارطة طريق لتنويع طرق تمويل المكتبات، تنزانيا

جوليثر إدوارد مايومبيا، كيليفا موانتيموا، إستير ندينجي-سيسلوي

مجلة الإفلا 45-4،

نبذة مختصرة:

يعد تضاؤل ميزانيات التشغيل أحد المشكلات القديمة التي تواجه المكتبات من مختلف الأنواع والأحجام. بحثت هذه الدراسة في فرص ريادة الأعمال المتاحة في مكتبات جامعة موهمبيلي للعلوم الصحية والخدمات الصحية المساعدة والمكتبات التابعة لمجلس خدمات المكتبات في تنزانيا. استخدمت الدراسة كل من النهج النوعية والكمية لجمع البيانات وتحليلها. بصرف النظر عن المقابلات والملاحظات الرئيسية، تم جمع البيانات الأولية من 55 من موظفي المكتبات باستخدام استبيانات تدار ذاتيًا. تكشف الدراسة أن فرص ريادة الأعمال قد تم تسخيرها بشكل ضئيل لتنويع المصادر المالية في هذه المكتبات. كما تشير النتائج إلى أن المانحين والحكومة يظلون المصدر الرئيسي للدخل لهذه المكتبات. استنادًا إلى النتائج، توصي الدراسة بأن تقوم المكتبات بصياغة وتنفيذ خطط استراتيجية لتوجيه مشاريع ريادة الأعمال. أيضًا، كطريقة للتنهين لريادة الأعمال، تم التوصية ببناء قدرات موظفي المكتبات.

### Barriers to ideal transfer of climate change information in developing nations

العوائق أمام النقل المثالي لمعلومات تغير المناخ في الدول النامية

برادي لوند

يعد التغير المناخي العالمي أحد أكثر الأزمات إلحاحًا في القرن الحادي والعشرين، حيث من المتوقع أن يكون تأثيره الاقتصادي بمليارات الدولارات، مما يسبب اضطرابات سياسية واجتماعية كبيرة. بينما تشير البحوث المستندة إلى الأدلة إلى الوسائل التي يمكن من خلالها للدول التكيف مع تغير المناخ، هناك عوائق هائلة تحول دون وصول هذه المعلومات إلى السكان الأكثر ضعفًا: أولئك الذين يعيشون في الدول النامية. يحدد التحقيق في العوامل التي تساهم في هذه العوائق ثلاث مراحل كبيرة في دورة حياة المعلومات التي ساهمت في هذه الظروف غير المواتية: استنساخ ونشر المعلومات، وتنظيم المعلومات وتخزينها، وإذاعة المعلومات/ المعرفة. يتم وصف كل مرحلة من هذه المراحل بالإضافة إلى الحلول المحتملة لتحسين نقل المعلومات وفعالية الدول النامية في التكيف مع ظروف تغير المناخ.

### School librarians in Sweden: A case study in change

المكتبيون في المدارس في السويد: دراسة حالة في التغيير

ليزلي فارمر

مجلة الإفلا 45-4،

نبذة مختصرة:

تكشف هذه الدراسة عن تعقيدات وديناميكيات القانون والحوكمة والممارسات التي أثرت على المكتبات المدرسية في السويد. قانون التعليم لعام 2010 وقانون المكتبات السويدية لعام 2013، اللذان فُرضا على المكتبات المدرسية، لم يتناولان شغل الوظائف، وقد حظيت هذه الثغرة باهتمام مؤخرًا، وخاصة في ضوء التغييرات في المناهج الوطنية ونقص المكتبات. تعد كلية المكتبات والمعلومات في جامعة بوراس أكبر مؤسسة رائدة في السويد لإعداد أمناء المكتبات المحترفين. وتعمل هيئة التدريس بالكلية على تغيير مناهجها الدراسية. تشرح هذه الورقة حالة دراسات المكتبات في السويد كدراسة حالة لعملية التغيير في المهنة.

IJ 45-4- 英语语言翻译摘要

国际图联期刊, 45-4, 277-288

### Predatory publishing and the Ghana experience: A call to action

掠夺性出版与加纳的经验：行动号召

科乔·艾罗洛·阿提所·阿提所(Kodjo Elolo Atiso Atiso), 詹娜·卡默(Jenna Kammer), 珍妮·波撒勒(Jenny Bossaller)

摘要

发展中国家的研究人员更有可能在掠夺性期刊(predatory journals)上发表论文。本研究探索了发展中国家加纳的科研人员对掠夺性期刊及其出版实践的理解。通过结合不同方法，加纳一组研究机构中的科研人员基于自己的研究经验解答了他们对掠夺性期刊特征的认识。他们的出版作品

也受到审查。结果表明,本研究中的大多数科研人员都了解掠夺性期刊,并经常被这些期刊所吸引,但不太清楚可以使用哪些工具来衡量某个出版作品的质量。此外,这些研究人员发表过的24%的专业期刊中12%的文章被认为是“掠夺性的”。这项研究的发现意义重大,表明科研人员对掠夺性期刊的认识可能比预期的要高,但他们可能缺乏必要的培训或工具来判断期刊是否合法。

### **An examination of IFLA and Data Science Association ethical codes**

国际图联和数据科学协会职业道德准则探究

谢丽尔·特雷帕尼尔(Cheryl Trepanier), 托尼·萨梅克(Toni Samek), 阿里·舍利(Ali Shiri)

国际图联期刊, 45-4, 289-301

#### 摘要

本文对比了2012年国际图联的《图书馆员和其他信息工作者职业道德准则》以及2013年数据科学协会的《数据科学专业行为准则》,探讨了两者的差异,以及有助于加强对图书馆和信息专业实践中职业道德内涵的实际理解的相关考虑。本文提醒读者不能将数据科学家与传统图书馆员的道德框架混为一谈,并支持开发一个更健全的图书馆和信息道德框架,以及一个更全面和包容的思考数据道德并将其概念化的框架。

### **The literate environment in Kenya: Re-conceptualizing the value of text**

肯尼亚的识字环境: 文本价值的重新概念化

布鲁克·香农(Brooke Shannon)

国际图联期刊, 45-4, 302-308

#### 摘要

阅读文化描述了一个社会对在教育环境之外推广阅读的重视程度。将焦点从打造阅读文化转移到培养识字环境,包括人们在日常生活中与文本互动的所有方式,是获得书面文字价值的另一种方式。本研究探索了肯尼亚识字环境(包括阅读文化)的发展程度。数据来自一项关于肯尼亚女大学生信息实践的探索性研究。研究表明,识字环境不仅存在,并且延伸到了校园之外。阅读文

化存在的证据也很明显,尽管扩散范围不算广泛。本案例展示了如何评估识字环境,从而更广泛地了解人们如何阅读那些可能被忽略的文本,这有助于制定更好的战略来加强人与文本的互动。

### **Knowledge Management Practice in South Asian Higher Education Institutions**

南亚高校知识管理实践

赛玛·坎瓦尔(Saima Kanwal), 米格尔·巴普蒂斯塔·努内斯(Miguel Baptista Nunes), 穆罕默德·阿里夫(Muhammad Arif)

国际图联期刊, 45-4, 309-321

#### 摘要

本文旨在探索关于南亚国家高校知识管理的研究,开展了系统性的文献综述,通过遵循详细的协议和系统的数据提取战略来识别、选择和检索相关的学术文献。研究表明,关于高校知识管理的理论研究和实际应用都比较有限,需要在这一领域开展更多研究。结果还显示出,有多种因素影响基础高校的知识管理实践,包括:教员、行政人员和信息专业人员。在分析文献综述结果的基础上,本文提出了一个概念框架,有望为今后的研究提供良好的基础,并为在南亚及其他地区更成功开展知识管理铺平道路。

### **Entrepreneurial opportunities: A roadmap for diversifying financial sources in libraries, Tanzania**

创业机会: 坦桑尼亚图书馆多种财政来源路线图

朱丽特·爱德华·马尤姆比亚(Julither Edward Mayomba), 克里发·姆万提姆瓦(Kelefa Mwantimwa), 伊斯特·登杰-西查卢韦(Esther Ndenje-Sichalwe)

国际图联期刊, 45-4, 322-333

#### 摘要

运营预算的缩减是不同类型和规模的图书馆面临的一个长期问题。本研究探索了坦桑尼亚莫西比利卫生与联合科学大学(MUHAS)和坦桑尼亚图书馆服务董事会(TLSB)图书馆遇到的创业机会和

风险。研究采用定性和定量方法开展数据收集和分析。除对关键知情人进行访谈和观察外，本研究还利用自编问卷向55名图书馆工作人员收集了原始数据。研究揭示，这些图书馆几乎没有利用创业机会使财政来源多样化。调查结果进一步说明，捐助者和政府仍然是这些图书馆的主要收入来源。在此基础上，研究建议图书馆制定和执行战略计划来指导创业项目，同时培养图书馆工作人员的能力并帮助他们做好准备。

### **Barriers to ideal transfer of climate change information in developing nations**

发展中国家实现气候变化信息理想传递的障碍

布雷迪·隆德(Brady Lund)

国际图联期刊, 45-4, 334-343

摘要

全球气候变化是21世纪一场紧迫的危机，它对经济造成的影响将达数万亿美元，并且会引发大规模的政治和社会动荡。尽管基于证据的研究表明，各国可以采取一些方式适应气候变化，但要将这些信息传递给最脆弱的群体(即发展中国家的人口)存在着巨大的障碍。对造成这些障碍的因素展开调查后，本文确定了信息生命周期中造成这

些不利条件的三个主要阶段：信息的复制和传播、信息的组织和储存以及信息与知识的扩散。本文详细介绍了每个阶段，并提出了改善信息传递、提高发展中国家适应气候变化效率的潜在解决方案。

### **School librarians in Sweden: A case study in change**

瑞典高校图书馆员：针对变革的案例研究

莱斯利·法梅尔(Lesley Farmer)

国际图联期刊, 45-4, 344-352

摘要

本研究揭示了影响瑞典高校图书馆的法律、治理和实践的复杂性和动态。针对高校图书馆的2010年《教育法》和2013年《瑞典图书馆法》都没有解决人员配备的问题，而这一漏洞最近备受关注意——特别是在国家课程改革和图书馆员短缺的情况下。博拉斯大学的图书馆和信息科学学院是瑞典规模最大、在培养专业图书馆员方面处于领先地位的机构。该校图书馆工作人员正在着手改革课程设置。本文以瑞典高校图书馆事业的现状为例，探讨了这一领域的改革流程。

## **Sommaires**

### **Predatory publishing and the Ghana experience: A call to action**

#### **Revue prédatrices et l'expérience ghanéenne: un appel à agir**

Kodjo Elolo Atiso Atiso, Jenna Kammer, Jenny Bossaller

Revue IFLA, 45-4, 277-288

Résumé:

Les chercheurs dans les pays en voie de développement ont plus de chances de publier dans des revues prédatrices (Xia et al. 2015). Cette enquête étudie la connaissance des revues prédatrices et de leurs pratiques de publication qu'ont les scientifiques du Ghana, un pays en voie de développement. Les chercheurs ont utilisé plusieurs méthodes d'approche auprès d'un

groupe d'organisations de chercheurs du Ghana. Il leur a été demandé dans quelle mesure ils maîtrisaient les caractéristiques des revues prédatrices, en se basant sur leur expérience personnelle en tant que chercheurs. Leurs publications ont également été étudiées. Les résultats indiquent que la plupart des scientifiques de cette étude connaissent les revues prédatrices qui les sollicitent souvent, mais qu'ils n'ont pas vraiment d'informations concernant les moyens qu'ils peuvent mettre en œuvre pour déterminer la qualité d'une revue. De plus, 12% des articles publiés, représentant 24% des revues dans lesquelles ces scientifiques ont publié, peuvent être considérées comme étant « prédatrices ». Les résultats de cette enquête sont significatifs parce qu'ils montrent que, bien que les scientifiques aient une meilleure connaissance des revues prédatrices que prévu, ils manquent de formation ou de moyens leur permettant de déterminer la légitimité d'une revue.

### **An examination of IFLA and Data Science Association ethical codes**

#### **Une analyse des codes éthiques de l'IFLA et de l'Association des Données Scientifiques**

Cheryl Trepanier, Toni Samek, Ali Shiri

Revue IFLA, 45-4, 289-301

#### Résumé:

Cet article compare le Code Ethique des Bibliothécaires et Autres Professionnels de l'Information de la Fédération Internationale des Associations de Bibliothécaires (IFLA) de 2012 avec le Code d'Ethique Professionnelle sur les Données Scientifiques de l'Association des Données Scientifiques de 2013. Il en aborde les contradictions ainsi que les aspects visant à une meilleure compréhension des implications de l'éthique sur la pratique professionnelle des bibliothèques et des professionnels de l'information. Cet article met en garde contre le risque de confondre le cadre éthique des données scientifiques avec ceux des bibliothécaires traditionnels, et soutient la mise en place d'un cadre plus rigoureux pour l'éthique des bibliothèques et des professionnels de l'information, ainsi qu'un cadre plus large et plus ouvert pour la réflexion et la conceptualisation d'une éthique des données.

### **The literate environment in Kenya: Re-conceptualizing the value of text**

#### **L'environnement littéraire au Kenya: revoir la conceptualisation de la valeur de l'écrit**

Brooke Shannon

Revue IFLA, 45-4, 302-308

#### Résumé:

La culture de la lecture est un terme qui décrit couramment la façon dont une société valorise la lecture en-dehors du cadre éducatif. En mettant l'accent sur l'environnement littéraire plutôt que sur la culture de la lecture, c'est-à-dire en prenant en compte toutes les interactions d'une population avec l'écrit dans leur vie de tous les jours, on met en place une approche alternative pour capter la valeur de l'écrit. Cette étude examine l'existence et l'étendue de l'environnement littéraire et de la culture de la lecture au Kenya. Les données ont été recueillies dans une étude préliminaire sur les pratiques de femmes fréquentant l'université au Kenya concernant l'information. Les observations montrent qu'il existe bien un environnement littéraire et que celui-ci s'étend au-delà du campus. Bien qu'on ne puisse pas généraliser, il y en ressort également des preuves de l'existence d'une culture de la lecture. Cette étude de cas démontre que l'analyse de

l'environnement littéraire permet d'avoir une meilleure compréhension de la manière dont une population interagit avec l'écrit, ce qui n'aurait pas été possible autrement. Un concept plus large permettra d'établir de meilleures stratégies pour renforcer la relation à l'écrit.

### **Knowledge Management Practice in South Asian Higher Education Institutions**

#### **Pratiques de Gestion de la Connaissance dans les Etablissements d'Enseignement Supérieur en Asie du Sud**

Saima Kanwal, Miguel Baptista Nunes, Muhammad Arif

Revue IFLA, 45-4, 309-321

#### Résumé:

Les recherches mentionnées dans cet article ont pour objectif d'explorer la recherche sur la Gestion de la Connaissance (GC) au sein des Etablissements d'Enseignement Supérieur (EES) des pays d'Asie du Sud. Une analyse documentaire systématique (ADA) a permis d'identifier, de sélectionner et de recueillir la littérature scolaire pertinente en suivant un protocole détaillé et en adoptant une stratégie d'extraction des données systématique. L'étude a montré qu'une recherche sur les GC au sein des EES avait été menée tant sur les aspects théoriques que sur les réalisations pratiques, indiquant qu'il était essentiel de poursuivre les recherches dans ce domaine. L'étude a également révélée que de nombreux facteurs affectent les pratiques de GC des principaux acteurs des EES: l'établissement, le personnel administratif et les professionnels de l'information. Les constatations sur l'analyse documentaire ont conduit à proposer un cadre conceptuel qui devrait constituer une bonne base pour les recherches à venir et ouvrir la voie à une mise en place plus réussie de la GC au sein des EES des pays d'Asie du Sud et au-delà.

### **Entrepreneurial opportunities: A roadmap for diversifying financial sources in libraries, Tanzania**

#### **Possibilités entrepreneuriales: une feuille de route pour la diversification des ressources financières des bibliothèques, Tanzanie**

Julither Edward Mayombya, Kelefa Mwantimwa, Esther Ndenje-Sichalwe,

Revue IFLA, 45-4, 322-333

#### Résumé:

La baisse des budgets opérationnels est l'un des problèmes les plus récurrents auxquels doivent faire face les bibliothèques de tout type et de toute taille. Cette

enquête a étudié les possibilités entrepreneuriales et les projets d'entreprise disponibles à l'Université de la Santé et des Sciences Connexes de Muhimbili (MUHAS) et aux bibliothèques de l'Agence des Services Bibliothécaires (TSLB) en Tanzanie. L'étude a été menée en utilisant à la fois des approches qualitatives et quantitatives dans sa collecte et son analyse des données. Outre des interviews et des observations auprès d'informateurs clés, des données primaires ont été recueillies auprès de 55 membres du personnel de bibliothèques à l'aide de questionnaires auto-administrés. L'étude révèle que les possibilités entrepreneuriales étaient exploitées de manière trop peu significative pour permettre la diversification des ressources financières dans ces bibliothèques. Il a également été constaté que les donateurs et le gouvernement restent les principales sources de revenu pour ces bibliothèques. Sur la base de ces conclusions, l'étude recommande aux bibliothèques d'élaborer et de mettre en œuvre des plans stratégiques pour accompagner des projets entrepreneuriaux. De même, pour générer une volonté entrepreneuriale, il a été recommandé de mettre en place le développement des compétences au sein du personnel des bibliothèques.

### **Barriers to ideal transfer of climate change information in developing nations**

#### **Les freins à la transmission idéale des informations sur les changements climatiques dans les pays en voie de développement**

Brady Lund

Revue IFLA, 45-4, 334-343

#### **Résumé:**

Le changement climatique Mondial constitue la crise la plus urgente du 21<sup>ème</sup> siècle, avec un impact économique évalué en milliards de dollars, et des bouleversements majeurs au niveau politique et social. Alors que des recherches basées sur des éléments prouvés offrent aux nations des moyens pour s'adapter au changement climatique, il existe d'énormes freins à la

diffusion de ces informations auprès des populations les plus vulnérables: celles qui vivent dans des pays en voie de développement. Une enquête sur les facteurs qui participent ces freins identifie trois grandes phases dans le cycle de vie des informations qui ont contribué à instaurer ces conditions défavorables: la reproduction et la diffusion de l'information, l'organisation et le stockage de l'information, et la transmission de l'information/la connaissance. Chacune de ces phases est décrite, ainsi que les solutions potentielles pour l'amélioration de la transmission de l'information et de l'efficacité des nations en voie de développement pour s'adapter aux circonstances du changement climatique.

### **School librarians in Sweden: A case study in change**

#### **Bibliothécaires scolaires en Suède: une étude de cas de changement de la profession**

Lesley Farmer

Revue IFLA, 45-4, 344-352

#### **Résumé:**

Cette étude révèle la complexité et la dynamique de la législation, de la gestion et des pratiques qui ont impacté les bibliothèques scolaires en Suède. La loi sur l'éducation de 2010 et la loi sur les Bibliothèques Suédoises de 2013 s'appliquant aux bibliothèques scolaires ne prenait pas en compte le personnel, et cette lacune a été mise en évidence récemment, en particulier à la lumière du changement du cursus de formation professionnel national, et du manque de bibliothécaires. L'École des Bibliothécaires et Professionnels de l'Information de l'Université de Bora est le plus grand et le principal établissement de formation des bibliothécaires professionnels en Suède. Cette grande école de formation des bibliothécaires scolaires est en train de changer son cursus de formation. Cet article explique la situation des bibliothécaires scolaires en Suède, qui constitue une étude de cas d'un processus de changement de la profession.

### **Zusammenfassung**

#### **Predatory publishing and the Ghana experience: A call to action**

#### **Predatory Publishing und die Erfahrungen in Ghana: Aufruf zum Handeln**

Kodjo Elogo Atiso Atiso, Jenna Kammer, Jenny Bossaller

IFLA-Journal, 45-4, 277-288

#### **Zusammenfassung:**

Wissenschaftler in Entwicklungsländern sind eher geneigt, in unseriösen Zeitschriften, sogenannten Predatory Journals, zu publizieren (Xia et al. 2015). Diese Studie befasst sich mit der Haltung von Forschern in Ghana, einem Entwicklungsland, in Bezug auf unseriöse Zeitschriften und deren

Veröffentlichungspraktiken. Mithilfe eines Mixed-Method-Ansatzes wurden Forscher in einem Cluster von Forschungsinstituten in Ghana anhand ihrer eigenen Erfahrungen als Wissenschaftler nach ihren Kenntnissen über Merkmale unseriöser Zeitschriften befragt. Auch ihre Veröffentlichungen wurden untersucht. Im Ergebnis waren sich die meisten der im Rahmen dieser Studie befragten Forscher von der Existenz unseriöser Zeitschriften bewusst und wurden auch von diesen angesprochen. Allerdings waren ihnen die Instrumente, mit denen sich die Qualität einer bestimmten Publikation ermitteln lässt, bedeutend weniger bekannt. 12% der veröffentlichten Artikel, die insgesamt 24% der einzelnen Zeitschriften ausmachten, in denen diese Forscher publizierten, ließen sich außerdem als „predatory“ (unseriös) bezeichnen. Die Ergebnisse dieser Studie sind signifikant, weil sie belegen, dass Forscher möglicherweise mehr über die Existenz unseriöser Zeitschriften wissen als erwartet, doch dass ihnen die Erfahrungen oder die Mittel fehlen, die ihnen bei der Unterscheidung seriöser von unseriösen Zeitschriften helfen.

#### **An examination of IFLA and Data Science Association ethical codes**

#### **Prüfung der Ethikcodes von IFLA und der Data Science Association**

Cheryl Trepanier, Toni Samek, Ali Shiri

IFLA-Journal, 45-4, 289-301

#### **Zusammenfassung:**

Diese Arbeit vergleicht den Ethikcode von 2012 der International Federation of Library Associations für Bibliothekare und andere Informationsspezialisten und die Standesrichtlinien für Datenwissenschaftler von 2013 der Data Science Association und diskutiert die Kluft und die damit zusammenhängenden Überlegungen, die das praktische Verständnis der ethischen Implikationen in der Praxis von Bibliothekaren und Informationsspezialisten festigen können. Diese Arbeit mahnt vor der Verschmelzung des ethischen Rahmens eines Informationsspezialisten mit dem eines traditionellen Bibliothekars und befürwortet die Entwicklung eines solideren Gerüsts für die Entwicklung ethischer Richtlinien für Bibliothekare und Informationsspezialisten sowie für einen umfassenderen und inklusiveren Denkrahmen in Bezug auf Datenethik und deren Konzeptualisierung.

#### **The literate environment in Kenya: Reconceptualizing the value of text**

#### **Literacy-Umfeld in Kenia: Neukonzeptionierung des Wertes von Texten**

Brooke Shannon

IFLA-Journal, 45-4, 302-308

#### **Zusammenfassung:**

Das Maß, in dem eine Gesellschaft das Lesen auch außerhalb des schulischen Rahmens wertschätzt, wird derzeit als Lesekultur bezeichnet. Die Verschiebung des Fokus von einer Lesekultur zu einem Umfeld, in dem das Lesen gefördert wird (Literacy-Umfeld), welches alle Arten der Interaktion von Menschen mit Texten in ihrem Alltag umfasst, ist eine alternative Möglichkeit zur Erfassung des Wertes des geschriebenen Wortes. Diese Studie untersucht, inwieweit ein Literacy-Umfeld, einschließlich einer Lesekultur, in Kenia existiert. Die Daten stammen aus einer Forschungsstudie zu Informationspraktiken von weiblichen Universitätsstudenten in Kenia. Aus den Ergebnissen lässt sich ablesen, dass ein Literacy-Umfeld existiert, und zwar auch außerhalb des Universitätscampus. Wenn auch nicht verallgemeinerbar, so zeigte sich doch deutlich auch das Vorhandensein einer Lesekultur. Diese Arbeit zeigt, dass die Untersuchung des Literacy-Umfelds wertvolle Erkenntnisse für den Umgang mit Texten liefert. Ein umfassenderes Konzept ermöglicht bessere Strategien, das Verhältnis von Menschen zu Texten weiter zu stärken.

#### **Knowledge Management Practice in South Asian Higher Education Institutions**

#### **Wissensmanagement in der Praxis an höheren Bildungseinrichtungen in Südasien**

Saima Kanwal, Miguel Baptista Nunes, Muhammad Arif

IFLA-Journal, 45-4, 309-321

#### **Zusammenfassung:**

Die in dieser Arbeit dargestellte Untersuchung bezweckte eine Bestandsaufnahme der Forschung zum Wissensmanagement (KM) an höheren Bildungsinstituten in südasiatischen Ländern. Zur Identifikation, Auswahl und Ermittlung relevanter wissenschaftlicher Literatur wurde eine systematische Literaturstudie anhand eines detaillierten Protokolls und einer systematischen Datenextraktionsstrategie durchgeführt. Die Studienergebnisse zeigten, dass im Kontext höherer Bildungsinstitute sowohl in Bezug auf

theoretische Aspekte als auch die praktische Implementierung lediglich in begrenztem Umfang nach KM geforscht wurde und dass weitere Studien in diesem Bereich dringend notwendig sind. Außerdem ergab die Studie, dass mehrere Faktoren die KM-Praxis bei den höheren Bildungseinrichtungen beeinflussen, und zwar die Fakultät, die administrativen Mitarbeiter und die Informationsspezialisten. Fazit der Analyse dieser Ergebnisse der Literaturstudie ist der Vorschlag eines konzeptuellen Rahmens, der eine solide Grundlage für künftige Forschungen bietet und Wegbereiter für eine erfolgversprechendere KM-Implementierung in den höheren Bildungsinstituten Südasiens und darüber hinaus ist.

**Entrepreneurial opportunities: A roadmap for diversifying financial sources in libraries, Tanzania**

**Unternehmerische Chancen: Ein Fahrplan zur Diversifizierung von Finanzquellen in Bibliotheken in Tansania**

Julither Edward Mayombya, Kelefa Mwantimwa, Esther Ndenje-Sichalwe,

IFLA-Journal, 45-4, 322-333

Zusammenfassung:

Rückläufige Haushaltsbudgets sind eines der anhaltenden Probleme von Bibliotheken aller Arten und Größen. Diese Studie hat die unternehmerischen Chancen und Projekte der Bibliotheken an der Muhimbili University of Health and Allied Sciences (MUHAS) und dem Tanzania Library Services Board (TLSB) in Tansania untersucht. Zur Datenerhebung und -analyse wurde sowohl ein qualitativer als auch ein quantitativer Ansatz gewählt. Neben Interviews mit Schlüsselfiguren und Beobachtungen wurden mithilfe von automatischen Fragebögen Primärdaten von 55 Bibliotheksmitarbeitern erhoben. Die Studie ergab, dass in diesen Bibliotheken unternehmerische Chancen zur Diversifizierung von Finanzquellen nur unzureichend genutzt wurden. Private Spender und die Regierung, so zeigte die Studie, waren darüber hinaus weitaus die wichtigsten Geldgeber für diese Bibliotheken. Aufgrund dieser Ergebnisse empfiehlt die Studie den Bibliotheken die Aufstellung und Implementierung strategischer Pläne zur Durchführung unternehmerischer Projekte. Als eine Möglichkeit zum Aufbau einer Bereitschaft zu unternehmerischem Handeln

wurde außerdem die Kompetenzentwicklung der Mitarbeiter vorgeschlagen.

**Barriers to ideal transfer of climate change information in developing nations**

**Barrieren für den idealen Transfer von Informationen zum Klimawandel in Entwicklungsländern**

Brady Lund

IFLA-Journal, 45-4, 334-343

Zusammenfassung:

Der weltweite Klimawandel ist eine der drängendsten Herausforderungen des 21. Jahrhunderts, dessen wirtschaftliche Folgen voraussichtlich zig Billionen US-Dollar kosten werden und der große politische und soziale Unruhen auslösen wird. Während die evidenzbasierte Forschung Lösungen vorträgt, mit denen sich Länder auf den Klimawandel vorbereiten können, kommen diese Informationen aufgrund großer Hürden kaum bei besonders gefährdeten Menschen an, nämlich bei denen, die in Entwicklungsländern leben. Eine Untersuchung der Faktoren für diese Hürden stellt drei vorrangige Phasen im Lebenszyklus von Informationen heraus, die für diese ungünstigen Bedingungen mit verantwortlich sind: die Reproduktion und Veröffentlichung von Informationen, die Organisation und Speicherung von Informationen und die Verbreitung von Informationen/Wissen. Jede dieser Phasen trägt gleichzeitig die potenzielle Lösung zur Verbesserung des Informationstransfers und der Effektivität in sich, mit der sich Entwicklungsländer auf den Klimawandel einstellen.

**School librarians in Sweden: A case study in change**

**Schulbibliothekare in Schweden: Fallstudie eines Wandels**

Lesley Farmer

IFLA-Journal, 45-4, 344-352

Zusammenfassung:

Diese Studie zeigt die Komplexität und Dynamik von Gesetz, Governance und Praxis auf, mit denen Schulbibliotheken in Schweden konfrontiert wurden. Das Bildungsgesetz 2010 und das schwedische Bibliothekengesetz 2013, in dem der Auftrag von Schulbibliotheken formuliert wurde, hatte die Mitarbeiter

übersehen; seit kurzem bemüht man sich, diese Lücke, vor allem vor dem Hintergrund der landesweiten Veränderungen im Curriculum und des Mangels an Bibliothekaren, zu schließen. Die Akademie für Bibliothek, Information, Bildung und IT an der Universität von Borås ist das größte und tonangebende

Institut in Schweden für die Ausbildung professioneller Bibliothekare. Diese Fakultät arbeitet derzeit an einer umfassenden Änderung ihres Curriculums. Die Arbeit erklärt die Situation der Schulbibliothekare in Schweden als Fallstudie eines Berufsstands im Wandel.

## **Аннотация**

### **Predatory publishing and the Ghana experience: A call to action**

#### **Хищнические издания и опыт Ганы: призыв к действию**

Коджо Элоло Атисо Атисо, Дженна Каммер, Дженни Боссаллер

IFLA Journal, 45-4, 277-288

#### **Аннотация:**

Научные работники в развивающихся странах более склонны к публикации своих работ в хищнических журналах (Ся с соавторами, 2015 г.). В рамках настоящей работы исследуется восприятие хищнических журналов и присущих им издательских приемов учеными-исследователями из Ганы, развивающейся страны. Научные работники в рамках одной группы исследовательских организаций Ганы были опрошены с применением смешанной методики о том, что им как исследователям известно из собственного опыта о характерных чертах хищнических журналов. Были также изучены их публикации. Результаты исследования показывают, что большинство опрошенных в рамках данной работы ученых-исследователей знакомы с хищническими журналами и часто получают от них приглашения, но при этом они в меньшей степени осведомлены об инструментах, способных помочь им в оценке качества того или иного издания. Кроме того, 12% опубликованных статей, что составляет 24% от уникальных журналов, в которых данные ученые-исследователи размещают свои работы, могут считаться “хищническими”. Результаты данного исследования имеют большое значение, поскольку указывают на то, что ученые-исследователи могут быть сверх ожиданий хорошо осведомлены о хищнических журналах, но могут иметь недостаточный уровень подготовки или набор инструментов, чтобы определить, является ли законным тот или иной журнал.

### **An examination of IFLA and Data Science Association ethical codes**

#### **Изучение кодексов этических норм ИФЛА и Ассоциации науки о данных**

Шерил Трепанир, Тони Сеймек, Али Шири

IFLA Journal, 45-4, 289-301

#### **Аннотация:**

В данной работе проводится сравнение “Кодекса этических норм библиотекарей и других работников сферы взаимодействия с информацией Международной федерации библиотечных ассоциаций и учреждений” 2012 г. с “Кодексом профессиональной этики работников сферы науки о данных Ассоциации науки о данных” 2013 г. и обсуждается их существенное различие, а также излагаются соответствующие идеи относительно укрепления практического понимания сущности этических норм в профессиональной деятельности библиотекарей и работников информационной сферы. В документе содержится предостережение о недопустимости объединения этической модели поведения специалистов сферы взаимодействия с данными с этической моделью поведения классического библиотекаря, а также выражается поддержка идеи разработки более надежной базы для этических норм в области библиотековедения и науки об информации и более масштабной и всесторонней модели для осмысления и концептуализации информационной этики.

### **The literate environment in Kenya: Re-conceptualizing the value of text**

#### **Грамотная среда в Кении: переосмысление значимости текста**

Брук Шеннон

IFLA Journal, 45-4, 302-308

#### **Аннотация:**

В рамках понятия культуры чтения в настоящий момент описывается понимание того, как в обществе оценивается чтение вне рамок учебного процесса. Смещение фокуса с культуры чтения на грамотность среды, понятие которой включает в себя все способы взаимодействия человека с текстом в его повседневной жизни, представляет собой альтернативный способ осознания значения письменного слова. В настоящей работе рассматривается масштаб присутствия в Кении грамотной среды, включающей и культуру чтения. Данные были собраны на основании поискового исследования методов получения информации, используемых женщинами, посещающими университет в Кении. Результаты показывают, что грамотная среда присутствует и распространяется за пределы территории университета. Культура чтения также очевидна, хоть ее свидетельства и едва ли поддаются широкому обобщению. Данный случай демонстрирует, как оценка грамотности среды позволяет получить расширенное понимание того, как человек взаимодействует с текстом, что в противном случае могло бы остаться незамеченным. Расширение данной концепции позволит разрабатывать прогрессивные стратегии, направленные на увеличение взаимодействия с текстом.

### **Knowledge Management Practice in South Asian Higher Education Institutions**

#### **Методы управления знаниями в высших учебных заведениях Южной Азии**

Саима Канвал, Мигель Баптиста Нунес, Мухаммад Ариф

IFLA Journal, 45-4, 309-321

Аннотация:

Целью исследования, освещаемого в настоящей работе, было изучение изыскательской деятельности в области управления знаниями (УЗ) в высших учебных заведениях (ВУЗах) стран Южной Азии. Для определения, отбора и получения соответствующей учебной литературы проводился систематический обзор литературы в соответствии с подробным протоколом и систематизированной стратегией извлечения данных. Результаты исследования показали, что изыскания в области управления знаниями в контексте ВУЗов были проведены в ограниченном объеме как в теоретическом плане, так и в отношении практического применения, что указывает на необходимость проведения дополнительных исследований в данной сфере. Также было обнаружено, что методы управления

знаниями подвержены влиянию многочисленных факторов в лице основных представителей ВУЗов: профессорско-преподавательского состава, управленческого персонала и специалистов в области информации. В ходе анализа результатов обзора литературы была предложена концептуальная модель, которая, как ожидается, станет надежной базой для будущих исследований, а также проложит путь к более результативному внедрению управления знаниями в ВУЗах Южной Азии и за ее пределами.

### **Entrepreneurial opportunities: A roadmap for diversifying financial sources in libraries, Tanzania**

#### **Возможность для предпринимательства: перспективный план диверсификации источников финансирования библиотек, Танзания**

Джулигер Эдвард Майомбия, Келефа Мвантимва, Эстер Нденье-Сихалве

IFLA Journal, 45-4, 322-333

Аннотация:

Урезание бюджета текущих расходов является одной из тех давних проблем, с которыми сталкиваются библиотеки разных видов и размеров. В рамках настоящей работы исследуются возможности для предпринимательства и организации предприятий, доступные в библиотеках Университета медицинских и смежных наук Мухимбили (MUHAS) и Танзанийского совета библиотечных услуг (TLSB) в Танзании. В рамках данного исследования использовались как количественный, так и качественный подходы к сбору и анализу данных. Помимо интервью с ключевыми источниками информации, а также наблюдений, первичные данные были собраны у 55 работников библиотек при помощи анкет для самостоятельного заполнения. Исследование показывает, что возможности для предпринимательства в данных библиотеках были задействованы для диверсификации источников финансирования в незначительной степени. Исследование также свидетельствует о том, что основными источниками дохода для указанных библиотек остаются жертвователи и правительство. На основании выводов, полученных в рамках данного исследования, библиотекам рекомендуется разрабатывать и осуществлять стратегические планы, в соответствии с которыми будут реализовываться предпринимательские проекты. Также в качестве средства увеличения предпринимательского потенциала рекомендуется повышать компетентность библиотечного персонала.

### **Barriers to ideal transfer of climate change information in developing nations**

#### **Препятствия на пути идеальной передачи информации об изменении климата в развивающихся странах**

Брейди Лунд

IFLA Journal, 45-4, 334-343

Аннотация:

Глобальное изменение климата является одним из наиболее острых кризисов 21-го века, прогнозируемые экономические последствия которого составят триллионы долларов, что может привести к осязаемым политическим и социальным потрясениям. В то время как доказательно обоснованные исследования предлагают способы, использование которых позволит государствам адаптироваться к изменению климата, существуют колоссальных масштабов барьеры, препятствующие доступу к данной информации наиболее уязвимой части населения: жителей развивающихся государств. Исследование факторов, способствующих сохранению этих барьеров, выявило три значимые фазы жизненного цикла информации, которая позволяет сохраняться таким неблагоприятным условиям: распространение и воспроизведение информации, организация и хранение информации, а также рассеивание информации/знаний. Описана каждая из названных фаз наравне с указанием возможных способов улучшения передачи информации и повышения

способности развивающихся стран адаптироваться к условиям изменения климата.

### **School librarians in Sweden: A case study in change**

#### **Школьные библиотекари в Швеции: исследование перемен на практическом примере**

Лесли Фармер

IFLA Journal, 45-4, 344-352

Аннотация:

В данной работе рассматриваются сложности и движущие факторы из сфер законодательства, управления и осуществления практических действий, оказавшие влияние на школьные библиотеки Швеции. Закон об образовании 2010 г. и Закон о библиотеках в Швеции 2013 г., которые сделали обязательным наличие школьных библиотек, не касались вопроса кадров, и именно этому упущению в последнее время уделяется особое внимание, в первую очередь с учетом государственных изменений в учебной программе и сокращений библиотекарей. Школа библиотечного дела и науки об информации университета Бюрос является крупнейшим и ведущим учебным заведением в Швеции, где готовят профессиональных библиотекарей. Школьный факультет библиотечного дела находится в процессе изменения учебной программы. Настоящая работа поясняет ситуацию со школьными библиотеками в Швеции в форме исследования процесса изменения профессии на конкретном примере.

## **Resúmenes**

### **Predatory publishing and the Ghana experience: A call to action**

#### **Las publicaciones depredadoras y la experiencia de Ghana: una llamada a la acción**

Kodjo Elolo Atiso Atiso, Jenna Kammer, Jenny Bossaller

IFLA Journal, 45-4, 277-288

Resumen:

Los investigadores de los países en vías de desarrollo tienen más probabilidades de publicar en revistas depredadoras (Xia et. al. 2015). En este estudio se examina el grado de conocimiento que tienen los científicos investigadores de Ghana, un país en vías de

desarrollo, acerca de las revistas depredadoras y sus prácticas de publicación. Por medio de un planteamiento basado en métodos mixtos, se preguntó a los científicos de un grupo de organizaciones de investigación de Ghana en relación con su nivel de conocimiento de las características de las revistas depredadoras según su propia experiencia como investigadores. También se examinaron sus publicaciones. Los resultados indican que la mayoría de los científicos investigadores que participaron en este estudio están al tanto de la existencia de revistas depredadoras y a menudo son solicitados por ellas, pero no son tan conscientes de las herramientas que pueden usar para averiguar la calidad de una determinada publicación. Además, el 12% de los artículos publicados que constituyen el 24% de las revistas únicas en las que estos investigadores publicaron podrían considerarse “depredadores”. Los resultados de esta investigación son significativos porque indican

que los científicos investigadores pueden tener más conocimiento acerca de las revistas depredadoras de lo que se espera, pero que también podrían carecer de la formación o las herramientas necesarias para decidir si una revista es legítima o no.

### **An examination of IFLA and Data Science Association ethical codes**

#### **Un examen de los códigos éticos de la IFLA y de la Data Science Association**

Cheryl Trepanier, Toni Samek, Ali Shiri

IFLA Journal, 45-4, 289-301

Resumen:

En este documento se compara el Código ético para bibliotecarios y otros trabajadores de la información de la Federación Internacional de Asociaciones de Bibliotecarios y Bibliotecas de 2012 y el Código de conducta profesional de la Data Science Association de 2013, y se analiza la desconexión y las consideraciones relacionadas que podrían reforzar la comprensión práctica de las implicaciones de la ética en la práctica profesional de la biblioteconomía y la información. En este documento se advierte de la necesidad de evitar que se mezcle el marco ético de un científico de los datos y el de un bibliotecario tradicional, y se apoya la elaboración de un marco más sólido para la ética de la biblioteconomía y la información, y de un marco más amplio e inclusivo para reflexionar sobre la ética de los datos y conceptualizarla.

### **The literate environment in Kenya: Re-conceptualizing the value of text**

#### **El entorno alfabetizado en Kenia: reconceptualizar el valor del texto**

Brooke Shannon

IFLA Journal, 45-4, 302-308

Resumen:

Comprender el modo en que una sociedad valora la lectura más allá del entorno educativo se describe actualmente en términos de una cultura lectora. Cambiar el centro de atención de una cultura lectora a un entorno alfabetizado, que abarca todas las formas en que las personas interactúan con el texto en su vida cotidiana, es una forma alternativa de captar el valor de la palabra escrita. En este estudio se examina hasta qué punto existe en Kenia un entorno alfabetizado que incluya una cultura lectora. Los datos se obtuvieron de un estudio exploratorio de las prácticas de información de las mujeres universitarias en Kenia. Los resultados muestran que existía un entorno alfabetizado que se extendía más allá del

campus. Sin ser ampliamente generalizable, también existían indicios de una cultura lectora. Este caso demuestra cómo la evaluación del entorno alfabetizado permite comprender mejor cómo se involucran las personas con un texto que de otro modo se perdería. Un concepto más amplio producirá mejores estrategias para potenciar la implicación con el texto.

### **Knowledge Management Practice in South Asian Higher Education Institutions**

#### **Práctica de gestión del conocimiento en instituciones de educación superior de Asia meridional**

Saima Kanwal, Miguel Baptista Nunes, Muhammad Arif

IFLA Journal, 45-4, 309-321

Resumen:

La investigación que se presenta en este documento pretende explorar la investigación sobre la gestión del conocimiento (GC) en instituciones de educación superior (IES) de los países del sur de Asia. Se realizó una revisión sistemática de la literatura (RSL) para identificar, seleccionar y recuperar la literatura académica pertinente, siguiendo un protocolo detallado y una estrategia sistemática de extracción de datos. Los resultados del estudio revelaron que la investigación limitada sobre la GC en el contexto de las IES se llevó a cabo tanto en los aspectos teóricos como en las implementaciones prácticas, lo que indica que es imprescindible llevar a cabo más investigaciones en este ámbito. Los resultados también revelaron que existen numerosos factores que afectan a las prácticas de GC entre los principales agentes de las IES: el profesorado, el personal administrativo y los profesionales de la información. Fruto del análisis de los resultados de la revisión de la literatura, se propone un marco conceptual que se espera que proporcione una base sólida para futuras investigaciones y allane el camino hacia una implementación más exitosa de la GC en las IES del Asia meridional y otras regiones.

### **Entrepreneurial opportunities: A roadmap for diversifying financial sources in libraries, Tanzania**

#### **Oportunidades para el emprendimiento: una hoja de ruta para diversificar las fuentes de financiación en las bibliotecas de Tanzania**

Julither Edward Mayomba, Kelefa Mwantimwa, Esther Ndenje-Sichalwe,

IFLA Journal, 45-4, 322-333

Resumen:

La disminución de los presupuestos operativos es uno de los problemas a los que se enfrentan desde hace mucho tiempo las bibliotecas de diferentes tipos y tamaños. En este estudio se han examinado las oportunidades y los proyectos de emprendimiento disponibles en las bibliotecas de la Universidad de Salud y Ciencias Afines de Muhimbili (MUHAS) y de la Junta de Servicios Bibliotecarios de Tanzania (TLSB). En el estudio se adoptaron enfoques cualitativos y cuantitativos para la recopilación y el análisis de datos. Aparte de las entrevistas y observaciones con informantes clave, se recopilieron datos primarios de 55 bibliotecarios por medio de cuestionarios auto-administrados. El estudio revela que las oportunidades de emprendimiento se aprovecharon de una manera poco significativa para diversificar las fuentes de financiación en estas bibliotecas. Los resultados indican además que los donantes y el gobierno siguen siendo las principales fuentes de ingresos de estas bibliotecas. Partiendo de estas conclusiones, el estudio recomienda que las bibliotecas formulen y apliquen planes estratégicos que orienten los proyectos de fomento de la iniciativa empresarial. Además, como una forma de generar preparación para el emprendimiento, se ha recomendado fomentar las capacidades entre el personal de las bibliotecas.

#### **Barriers to ideal transfer of climate change information in developing nations**

#### **Barreras para la transferencia idónea de información acerca del cambio climático en los países en vías de desarrollo**

Brady Lund

IFLA Journal, 45-4, 334-352

Resumen:

El cambio climático mundial es una de las crisis más acuciantes del siglo XXI, con un impacto económico que se prevé que ascenderá a billones de dólares y que provocará grandes trastornos políticos y sociales. Si bien la investigación basada en datos sugiere medios a través de los cuales las naciones pueden adaptarse al

cambio climático, existen enormes obstáculos para que esta información llegue a las poblaciones más vulnerables: las que viven en países en vías de desarrollo. Una investigación de los factores que favorecen estos obstáculos identifica tres amplias fases en el ciclo de vida de la información que han contribuido a estas condiciones desfavorables: la reproducción y difusión de la información, la organización y el almacenamiento de la información, y la difusión de la información y el conocimiento. Se describe cada una de estas fases, así como las posibles soluciones para mejorar la transferencia de información y la eficacia de los países en vías de desarrollo para adaptarse a las condiciones del cambio climático.

#### **School librarians in Sweden: A case study in change**

#### **Bibliotecarios escolares de Suecia: un caso práctico en pleno cambio**

Lesley Farmer

IFLA Journal, 45-4, 344-352

Resumen:

En este estudio se revelan las complejidades y dinámicas de la ley, la gobernanza y la práctica que han afectado a las bibliotecas escolares en Suecia. La Ley de Educación de 2010 y la Ley de Bibliotecas de Suecia de 2013, que regían las bibliotecas escolares, no abordaron la cuestión de la dotación de personal y, recientemente, se ha prestado atención a esta carencia, especialmente a la luz de los cambios en los planes de estudio nacionales y la escasez de bibliotecarios. La Escuela de Biblioteconomía y Documentación de la Universidad de Borås es el centro líder en Suecia en la preparación de bibliotecarios profesionales. La facultad de biblioteconomía de la escuela está inmersa en un proceso de cambio del plan de estudios. En este documento se explica la situación de las bibliotecas escolares en Suecia como un caso práctico de un proceso de cambio en la profesión.

