Editorial

There are eight articles in the current issue of this journal. The papers focus on topical issues in the information sector, starting with copyright literacy among Nigerian librarians, co-authored by Shamsi et al. The first paper specifically surveyed copyright awareness, attitudes, and abilities. This is followed by the second paper, an interesting topical issue which is novel, research excellence. Using Web of Science, Kenya's research excellence was examined by Onyancha, Mwai and Kwanya. The third paper by Tshikoshi and Nwagwu discusses the adoption and use of web technologies by librarians in open distance e-learning at the University of South Africa. The fourth paper, on the use of social media by academic libraries in Ghana, was investigated by Mensah. She used the unified theory of acceptance and use of technology (UTAUT) as its theoretical basis.

The fifth paper, on information behaviour on loan procurement by textile traders in Nigeria, was investigated by Adekannbi and Akuma. It analysed micro, small and medium enterprises traders, The sixth paper, a literature analysis of the implementation of grassroots e-government services in South Africa, was carried out by Nkomo and Moyane. The seventh paper presents the continuing professional development and institutional support for academic librarians in Botswana. The topic was examined by Mooko and Oladokun. The final paper in this issue, by Usman and Auyo, investigated the determinants of reading habits for serials publications by undergraduate students in Bayero University Library, Nigeria.

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African Journal of Library, Archives and Information Science is established mainly to provide a forum for librarians, archivists, documentalists, information scientists and other information related professionals in Africa to report their research findings but with emphasis on African setting. The Journal is refereed by distinguished scholars. Emphasis is on empirical research; however, manuscripts of high quality on theoretical aspects of the three information related disciplines will be considered for publication.

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Manuscripts and other editorial materials should be simultaneously directed to the Editor-in-Chief, Professor Omwoyo Bosire Onyancha, University of South Africa, Pretoria, South Africa *(onyanob@unisa.ac.za)* and the Publishing Editor, Professor Iyabo Mabawonku, University of Ibadan, Ibadan, Nigeria (imabawonku@gmail.com).

Copyright Literacy among Nigerian Librarians: A Survey of Copyright Awareness, Attitudes, and Abilities

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Abstract

As copyright issues become increasingly prominent in the Internet age, librarians must have a high-level of knowledge in order to ensure that copyright laws are followed, and patrons are aware of potential violations. This study examines the awareness of and attitudes towards copyright policy and practices among professional librarians in Nigeria. A 27-item survey distributed in early 2021 to 110 library professionals received 85 responses. Three-fourths of participants indicated that they had a moderate or extremely good awareness of copyright, though competency in specific aspects of copyright varied greatly (e.g., 90% were familiar with national copyright laws, but only 14% with the concept of "copyleft"). Responses were mixed as to whether the libraries at which librarians were employed had a specific copyright policy in place or aligned with national copyright legislation. Based on the findings of this survey, suggestions for improving copyright education and practices in libraries.

Keywords: *Copyright Literacy, Copyright Awareness Copyright Attitude, Nigeria*

Introduction

Violation of copyright has been identified as a major problem, negatively impacting creative drive and hampering intellectual productivity in Nigeria. One must only look at the impact of pirating in the Nigerian film industry, which has led to the loss of significant financial gain costing up to an estimated $2 billion US dollars annually (Olutayo, 2016). Torrents of pirated films can be released to the market the same day as the original copies, threatening copyright owners' profitability. Abuse of intellectual property is a single variable destroying the development of the arts and originality in Nigeria, even though legislation measures and policies have been implemented all to no avail (Essien, 2017).

The term "Copyright Literacy" is less than a decade old. The term was first used by Professor Tania Y. Todorova in 2012; in 2014, the first research study examining this subject was published in a multinational study (Todorova *et al.,* 2014). Morrison and Secker define copyright literacy as, "acquiring and demonstrating the appropriate knowledge, skills and behaviours to enable the ethical creation and use of copyright material" (Morrison & Secker, 2015). Today, the Internet and digital technologies, due to free and easy access, lack of supervision over how to use them, and the growing of Internet penetration rate, have complicated issues surrounding the breach and implications of copyright law. Though copyright

applies to almost everything on the Internet, it is easy for users' and content producers to ignore (Kortelainen, 2015). Such ready conditions for copyright infringement in the digital age has left users and information providers constantly faced with copyright issues.

Librarians serve a key role as guides, facilitators and educators on copyright-related issues (Secker & Morrison, 2016), and may also play a role in developing local copyright policy (Hofman *et al.,* 2013). Librarians in Nigeria are often recognised as copyright experts and act as a reference on copyright issues. Their approach and attitude are likely to influence others and the guidance provided to a wide range of users (IFLA, 2018). Therefore, librarians can be considered as the top consultants in copyright and related rights, despite the fact that librarians are not legal specialists and often lack copyright training in their library school courses. If librarians lack knowledge of copyright issues, this can produce both anxiety for the librarian and potential legal concerns for the library (Secker and Morrison, 2016). For this reason, it is important to better understand the current levels of copyright literacy among Nigerian librarians and identify areas in which instruction in copyright issues may be improved in library schools and within the profession as a whole.

Research Questions

The present study seeks to answer the following questions:

1. How familiar are Nigerian librarians with copyright-related issues?

2. What are the opinions of Nigerian librarians towards institutional level copyright policy?

3. How much do Nigerian librarians know about copyright policy at their country and at institutional level?

4. What are the opinions of Nigerian librarians about adding copyright-related topics to LIS education?

Literature Review

The *Copyright Act Laws of the Federal Republic of Nigeria 2004* is the foremost law that governs and safeguards copyrights issues in Nigeria. The monitoring agency that controls copyright registration in Nigeria, and works under the purview of this law, is the Nigerian Copyright Commission (NCC). The Copyright Act *(Federal Republic of Nigeria, 2004)* makes provisions for the protection, infringement, transfer, and remedies for contravention of copyrights in Nigeria. The functions of the NCC under Section 34 (3) of the Act include: responsibility for issues relating to Copyright in Nigeria, responsibility to observe and oversee the position of the country concerning global convention and advice to government, responsibility to ensure mutual and multilateral agreements between Nigeria and other countries, and responsibility to educate the general public on matters relating to copyright and keeping a database of authors and their works (Onoyeyan, 2018). It is imperative that Nigerian librarians are fluent with this law in order to ensure that library patrons abide by the rules and statutes set forth by the nation.

According to Durodolu (2016), copyright literacy is related to ethical issues about the use of intellectual property to avoid plagiarism and breach of copyright. Murray (2012) opines that it is imperative to be mindful of concepts such as privacy, security, copyright, intellectual freedom, fair use, censorship and freedom of speech because they have effect on responsible information use in the 21st Century. Information literate citizens are expected to recognise and observe rules and regulations concerning ethical use of information, by learning how to properly acknowledge various sources by precisely citing the use of intellectual properties. In the opinion of Onoyeyan and Awe (2018), the protection of copyright in Nigeria is an essential role of the librarian, and it was discovered that librarians are cognisant with the requirements of copyright law and take measures to avoid its infringement. The study recommended that librarians as information experts should be deliberate in ensuring that copyright is not violated in the library by enforcing compliance. Afegbua (2017) noted that library schools in particular should be aware of regulation guiding photocopy of materials because it is a way to deprive intellectual property holder the benefit of their hard work. In a study by Nworie *et al.* (2019), it was revealed that library personnel are cognisant with copyright law that governs the information resources in their care

and they comply with the provision of the Copyright Act to a large extent. The authors are of the opinion that there is a positive relationship between library personnel's awareness of copyright law and compliance with copyright law in Nigerian University libraries. Therefore, it was recommended that library management should participate actively in sensitising librarians on copyright law and any act that constitute violation of copyright regulations. These studies all indicate a good base-level knowledge of copyright concepts, but do not indicate whether Nigerian librarians have sufficient mastery of advanced concepts necessary to educate patrons and adhere to all facets of copyright law.

Adu and Van der Walt (2021a; 2021b) examined levels of awareness of copyright policies among academic librarians in Ghana, finding that the level of knowledge was generally moderately strong but could vary based on the experience of respondents and the specific copyright topic being discussed. Most studies in this area of copyright awareness and literacy have suggested that competency can indeed vary based on specific concepts or aspects of copyright. For instance, Fernandez-Molina et al. (2017), in their study of Brazilian librarians, found that there was limited knowledge of what circumstances could constitute an exception to standard copyright limitations (e.g., for teaching or library use) as well as limited knowledge of copyleft licenses and their implications. Similar gaps were found in studies in an early study of a university in Ghana (Korletey and Tettey, 2015), and librarians in Finland (Kortelainen, 2015), the United Kingdom (Morrison and Secker, 2015), and the United States (Estell & Saunders, 2016). The extent to which these gaps in awareness exist among Nigerian librarians is unknown. This study, in addressing this gap, will add to this emerging body of research and identify specific copyright-related learning needs for Nigerian librarians.

Methods

This study is grounded in the positivist philosophical paradigm, which favours quantitative methods to examine an objective reality about the world and human experience (Majeed, 2019). Specifically, this study employs a survey, or questionnaire, approach to examining copyright literacy of Nigerian librarians (Babbie, 2010). This approach was selected due to its ability to capture a large number of perspectives over a relatively short period of time (whereas it may take five- or ten-times as long to collect the same number of responses from an interview-based study. There are also benefits, in a quantitative study, to utilise discreet answer choices (multiple choice, Likert scales) as opposed to open-ended type questions. This survey was designed online, using Google Forms, and was designed to elucidate responses from librarians in Nigeria about their awareness, opinions and policy in relation to copyright issues within the country. The questions for the survey were adapted from and inspired by the study of Todorova et al (2017), which examined similar issues among librarians across the world. The questionnaire was launched on the web platform in "Google Forms" with the automatic receive and store feature. The link of this survey was shared from 12 January 2021 among Nigerian librarians by Nigerian Library Association (http://nla.ng), professional blogs and WhatsApp groups. It is estimated that approximately 110 librarians received the request to participate. Data collection ended on January 21, 2021, with 85 librarians having participated in the study (providing a complete and valid response to all questions).

The questionnaire consisted of 27 questions, including mainly closed-ended questions (some based on a five-point Likert Scale) along with a few open-ended questions. The questionnaire had four general sections: 1-Demographic characteristics (including age, gender, educational and professional experience of participants), 2-knowledge and awareness of copyright related issues, 3-copyright policy in institutional level and 4-opinions of librarians about copyright related topics in LIS education and Lifelong Learning Scale (LLL). In this study, survey data were analysed within IBM SPSS (version 27), with Chi-square tests to examine whether any differences in responses were evident based on demographics of respondents. $P<0.05$ was considered statistically significant.

Results

Demographics of Respondents

A total of 85 complete responses to the survey were received. Among the respondents, 36 were men (42.4%) and 49 were women (57.6%). Only two respondents were under the age of 30 (2.4%), while 13 were between the ages of 30 and 39 (15.3%), 36 were between the ages of 40 and 49 (42.4%), 29 were between the ages of 50 and 59 (34.1%) and 5 were older than age 60 (5.9%). Four of these respondents had attained a bachelor's degree only (4.7%), while 81 (95.3%) had at least a master's degree, and 31 (36.5%) had a PhD. 20 respondents had less than 10 years of experience (23.5%), 48 had between 10 and 19 years of experience (56.5%), and 17 had 20 or more years of experience (20%). While the majority of respondents (70.6%) were employed in academic libraries, 11.8% worked in special libraries, and 17.6% were employed in some other type of library (e.g., school, public, government, archives). Based on these demographics, it can be said that these perspectives largely represent those of senior academic librarians in Nigeria, due to oversampling in these areas.

Librarians General Copyright Awareness

As indicated in Table 1 below, the vast majority of survey respondents indicated that they were moderately or extremely aware of copyright (78.9%). However, it is important to note that this is merely a self-rating of general copyright awareness, and respondents are likely to overrate their own skills (e.g., a potential Dunning-Kruger effect). While no statistically significant differences were found in survey responses based on demographic groups, responses to this question were closest to having a statistically significant effect, with $X^2 = 9.76$, p = .12. The greatest difference was among the number of respondents in the 10-19 years of library experience group who indicated that they were "extremely aware" (31%) which was much greater than the less than 10 years' experience group (only 10%) and 20+ years' experience group (12%). This again suggests a potential Dunning-Kruger effect, whereby those with moderate experience overrate their skills/knowledge, while those with less or more experience are more accurate in their skills assessment (Mahmood, 2016).

Table 1: General Copyright Awareness

General Awareness about Copyright	Numbers (n=85)	Percentage (n=85)
Extremely Aware	19	22.35%
Moderately Aware	48	56.47%
Somewhat Aware	11	12.94%
Slightly Aware	6	7.06%
Not at all Aware	1	1.18%

As shown in Tables 2 and 3 below, the proportions of respondents that were familiar with various general (Table 2) and specific (Table 3) copyright concepts. While general aspects of national copyright laws and open access policy were familiar to most respondents, very few were familiar with the concepts of "copyleft" (referring to the free distribution of works) and "clearing rights" (i.e., receiving direct permission to produce and use works). While there is some overlap among these concepts, each is distinct and important for copyright experts to understand.

Table 2: Familiarity with Copyright Concepts

Copyright Concepts	Numbers (n=85)	Percentage (n=85)
National Copyright Laws	76	89.41%
Open Access	72	84.72%
Fair Use/Dealings	52	61.18%
License Policy for Digital Resources	51	60.00%
International Copyright Law	48	56.47%
Creative Commons Licensing	45	52.94%
Licensing Relationship within your institution	32	37.65%
How to Clarify Copyright Status of Materials	20	23.53%
Copyleft	12	14.12%
Clearing Rights	10	11.76%

Among specific copyright issues, a majority of respondents indicated that they were familiar with issues of copyright relevant to institutional repositories and digitisation, but very few were familiar with how to handle copyright concerns related to out-of-print and orphan works. More experienced librarians tended to indicate more familiarity with each of these concepts, on average than those with less experience. However, no discernable difference was found based on educational attainment or gender.

Table 3: Knowledge of Specific Types of Copyright Issue

Knowledge of Specific Types of Copyright Issues	Numbers (n=85)	Percentage (n=85)
Institutional Repositories	52	61.18%
Digitization	51	60.00%
Public Domain	41	48.24%
E-Learning Materials	34	40.00%
Out-of-Print Works	23	27.06%
Orphan Works	16	18.82%

Respondents' Knowledge of Copyright Policy at Institutional Level

Table 4 displays findings relevant to the existence and knowledge of copyright policy at an institutional level among respondents to this survey. Almost 44% of the respondents reported that their institution had a copyright policy to deal with copyright issues, at the same time it was also worrying that almost 33% of the respondents were not aware of any copyright policy exist in their institution. Over 90% of the Nigerian librarians studied were of the opinion that institutional copyright policy was of very much necessary for libraries and cultural institutions. With growing digital content and licensing agreement for accessing scholarly resources through publishers and other e-resource vendors, it has become important to have copyright policy at the institutional level to negotiate and provide access to digital scholarly content without any copyright restrictions or violation. More than three-fourths of the respondents indicated that their institutions had the resources protected by copyrights. When it was asked about, was there any person in-charge of dealing with copyright issues in their institutions only 27.06% respondents answered yes and 35.29% of the respondents have said that there was no person in their institution responsible for copyright issues. This result shows that most of the Nigerian libraries and cultural institutions have not had a person who could exclusively look after copyright issues.

Table 4: Copyright Policy at Institutional Level

Features	Yes	%	No	%	I am not Aware	%
Do you have a copyright policy or internal regulations in your institution?	41	48.24%	16	18.82%	28	32.94%
Do you think institutional copyright policy is necessary for libraries and other cultural institutions?	78	91.76%	3	3.53%	4	4.71%
Does your institution (library, archive, museum etc.) possess resources protected by copyright and related rights?	64	75.29%	9	10.58%	12	14.11
Is there a person in your institution in charge of dealing with copyright issues in particular?	23	27.06%	30	35.29%	32	37.65%

Knowledge of National Copyright Policy

Table 5 shows respondents' knowledge of the national copyright policy in Nigeria. The survey results showed that over one-half of the respondents had a high level of knowledge of national copyright policy in Nigeria. However, over one-third of the Nigerian librarians had limited knowledge of the national copyright policy in Nigeria. A small fraction of the respondents (2.36%) were not aware if there was a national copyright policy in their country. Compared to Table 2, where nearly 90% of respondents indicated that they had knowledge of national copyright policy, this finding indicates that only about two-thirds actually had such knowledge (again indicating the possible presence of a Dunning-Kruger effect).

Table 5: Knowledge of National Copyright Policy in Nigeria

Knowledge of National Copyright Policy in Nigeria	Numbers (n=85)	Percentage (n=85)
High Knowledge/Awareness	53	62.40%
Limited Knowledge/ Awareness	30	35.30
No Knowledge/Awareness	02	2.35%

When it was further examined how knowledgeable the Nigerian Librarians were about their national copyright policy, it was found that 60% of the respondents were aware about copyright exceptions for private use, educational, scientific and research purpose as shown in Table 6. Almost similar percentage (58.82%) of the Nigerian librarians were aware about copyright relaxation for exceptions for libraries, museums and archives and right for librarians to provide modified copies (e.g., converting books or other resources into braille) copies of works to serve the need of the visually impaired patrons. Only 24.71% of the respondents knew about the duration of copyright protection for books and other copyright protected materials and 11.76% were aware of copyright related matters about orphan works.

Table 6: Librarians Awareness about Specific National Copyright Legislation Provisions

Features	Numbers (n=85)	Percentage (n=85)
Exceptions for private use, educational, scientific and research purposes	51	60.00%
Exceptions for libraries, educational institutions, museums and archives	50	58.82%
Rights for librarians to provide modified copies of works to serve the needs of visual impaired patrons	50	58.82%
Duration of copyright protection	21	24.71%
Orphan works (e.g. compulsory license or limitation of liability)?	10	11.76%

Inclusion of Copyright/IPR Issues in LIS Curriculum and Continuing Education

Almost all the 98.82% respondents in the survey opined that inclusion of copyright and IPR issues in LIS curriculum and cultural heritage science education was very necessary. All respondents agreed that it was necessary to include copyright/IPR issues both in continuing education of LIS and cultural heritage professionals. The overwhelming response indicates the importance of knowledge of copyright and IPR issues for librarians working in Nigeria

The word cloud (Figure 1) indicates the topics that should be included in LIS curriculum and Cultural Science Education as suggested by the respondents. Out of the 85 respondents who answered this question, a plurality of them (30.58%) suggested that copyright law should be included in both LIS curriculum and cultural science education. Intellectual Property Rights (IPR) was another domain that was highly recommended, by 22.35%

of the respondents. Digital rights management, plagiarism, fair use or dealing, publishing and privacy were some of the other topics which were highly suggested by the Nigerian Librarians in this survey for the inclusion in the LIS and Cultural Science Education curriculum. Figure 1 shows the topics that have been suggested by the participants in the survey. In the Figure, the larger the word in the visual the more frequently the topic was suggested by the respondents.

The suggested topics in the survey provide a snapshot of lack of inclusion of copyright related issues in LIS and Cultural Science Education curriculum in the Nigerian LIS schools. Most of the topics suggested by the respondents were of introductory concepts of copyright and IPR. Nigerian LIS schools and Cultural Science Education programme managers could consider using World Intellectual Property Organisation (WIPO) and other copyright related organisations at national and international levels in developing course content on IPR and copyright.

Figure 1: Word Cloud of Topics Suggested by the Respondents to Include in LIS Curriculum & Cultural Heritage Science Education (created using worditout.com)

Discussion

This study examined copyright literacy awareness and familiarity among Nigerian librarians. The findings of the study provide some significant insights with regard to Nigerian librarians' copyright literacy skills and may also help Nigerian LIS and cultural heritage Science Education institutions to embark on new initiatives to incorporate copyright literacy skills in LIS and Cultural Science Education curriculum to deal with emerging copyright and intellectual property rights issues.

Respondents to this survey appear to have a moderate level of awareness of general copyright issues, though they also tend to overrate their own skills and likely could benefit from more training on these general concepts. Emerging copyright topics, like copyleft, appear to be less well-known among these respondents, which could present challenges if library patrons – students and faculty – have questions about these concepts. Expanding training in these areas should be a priority for Nigerian librarians and educational institutions.

This study found that Nigerian librarians are familiar with emerging open science concepts such as open data, open access and open educational resources, copyright related institutions at national level, digitisation, copyright issues involved in developing institutional repositories, fair use, and licensing for information sources. Librarians' involvement in licensing agreements with content providers or publishers and providing information under fair use policies in their day to day work environment made them very familiar with these concepts. Similar to previous studies (Hossain, 2020), Nigerian librarians were also less familiar with clearing rights, copy-left, orphan works, and out of print works. Studies after studies have found that LIS professionals in other countries were also not familiar with copy-left, orphan works, and out of print materials related to copyright issues.

Most of the respondents in this survey were of the opinion that copyright/intellectual property rights issues must be included in LIS and cultural heritage science education curriculum and also part of continuing education of LIS and cultural heritage professionals. Some of the topics suggested by the Nigerian librarians in the survey are: copyright law, intellectual property rights, digital rights management, plagiarism, fair use and publishing and privacy. The topics suggested by the Nigerian librarians in the inclusion of LIS and cultural heritage science education curriculum is a clear indication of lack of general awareness of copyright and IPR. Nigerian librarians suggested that organising training programmes, thematic workshops, panels and conferences and online courses though distance education would be useful for continuing education on copyright issues to keep update with the latest development in the field. The survey participants have also suggested for copyright and IPR related case studies could be included in the curriculum so that they would have practical experience or exposure in handling copyright and IPR related issues in the ever-changing information ecosystem with technological interventions.

Conclusion

The findings of the study align with those of previous studies of copyright literacy in other countries and, similar to these studies, emphasise the imperative for Nigerian libraries and librarians to enhance or improve upon the awareness of copyright concepts. Having a key role in the understanding of copyright for published materials within the country, librarians are expected to enforce policy as well as inform others, which is challenging when these professionals lack such knowledge themselves. This study has illuminated clear areas upon which educational programmes can develop or evolve their copyright instruction, such as licensing, copyleft, clearing rights, copyright for out-of-print and orphaned works, institutional copyright policy, and general intellectual property rights. LIS schools and cultural heritage science education programmes may enrich their curriculum by adding one, or multiple, courses on the topic of copyright and incorporating these important emerging topics into their lessons. Practising librarians may also seek out continuing education opportunities, while professional development organisations like the International Federation of Library Associations and Institutions (IFLA) and the Nigerian Library Association (NLA) may work to promote these educational opportunities for its membership.

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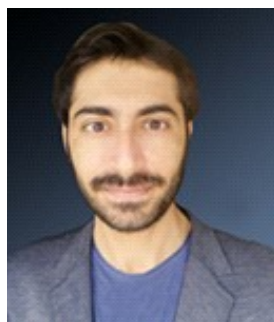
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Kenya's Research Excellence as Indexed in the Web of Science: An Informetrics' Perspective

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Abstract

Research excellence (RE) is a relatively new concept which has been gaining traction among scholars, government agencies and funders. No universally accepted definition of RE exists. In this paper, however, it is perceived as the sustained conceptualisation, design, execution and dissemination of optimal volumes of high quality research products which contribute effectively to societal wellbeing. The concept of research excellence is just emerging in Kenya. Indeed, the literature reviewed in this paper reveals that the perception, measurement, and reporting of research excellence in Kenya is largely unknown. Therefore, this paper seeks to unravel these issues as a means of promoting research excellence in the country. The study anchoring this paper assessed the top papers produced in Kenya to gauge the country's RE. Data were obtained from Clarivate Analytics' Web of Science (WoS) Core Collection databases, the Essential Science Indicators and the Journal Citation Reports. Specifically, the paper explores the trend and volume of the highly cited and hot papers as the percentage share of Kenya's total research publications; identifies the journals and assessed the quality of the journals in which Kenya's highly cited and hot papers are published; examines the subject content and research field yielding the most highly cited and hot research papers in Kenya; determines the extent of research collaboration in the highly cited and hot papers; and benchmarks Kenya's performance in the top papers against the rest of Africa. The study reveals an increase in the publication of the top papers, largely in the form of journal articles; a heavy co-authorship of the papers; a favourable performance by Kenya when compared to the rest of the African countries; and the publication of the country's top papers in prestigious international journals. Kenya's RE is partly dependent on the dissemination of its research in high impact factor journals. In addition, the country's RE is heavily dependent on the performance of science fields such as internal medicine, environmental sciences and ecology, and public health and agriculture.

Keywords: *Research Excellence, Informetrics, Scientometrics, Kenya*

Introduction

The importance of excellence in scientific progress is widely documented in existing scientometrics literature (Aksnes, 2003; Tijssen *et al.,* 2002; Vertesy and Tarantola, 2012). The concept of research excellence (RE) is relatively new and as such no clear definition has been adopted. Similarly, no standardised method of evaluating research influence has been universally accepted. There is an ongoing debate amongst scholars on the meaning of excellence (Tijssen, 2003), its capacity to provide a quantitative assessment of research activities (Vertesy and Tarantola, 2012), as well as potential to support policy choices (Ferretti *et al.,* 2018). Ferretti *et al.* (2018) explain that excellence is a complex, value-laden and multidimensional concept which is not only relative but also emergent (Tijssen, 2003; Ferretti *et al,* 2018).

Furthermore, according to Tijssen (2003), excellence is a comparative expression denoting superiority in terms of quality or quantity and driven by the researchers' need to demonstrate return on investment to funders of research activities (Martin, 2011). While the common definition of excellence is elusive, excellence is not only perceived as an utmost indication of performance but also as the motivating power for progressive policies with high levels of national competition (Tijssen *et al.,* 2002; Rodríguez Navarro, 2011; Vertesy and Tarantola, 2012).

Tijssen (2003) argues that the pursuit for research excellence is aimed at achieving three main objectives, identified as 1) producing new and high quality scientific knowledge to catalyse innovations and socioeconomic development; 2) effective dissemination of the knowledge to its potential users; and 3) application of the knowledge to enhance the competitive advantage of individuals, institutions, and nations. Research excellence is perceived as generating research outcomes of exceptional quality and quantity which are relevant to specific societal needs and contexts. Sørensen *et al.* (2016) perceive research excellence as the intrinsic quality embedded in research processes, researchers and research institutions while Hardeman *et al.* (2013) assert that research excellence is "the top-end quality outcome of systematically performed creative work undertaken to increase the stock of knowledge and new applications". Rodríguez Navarro (2011) aver that research excellence is an indicator of high level of performance in conducting research and generating relevant outcomes. Tijssen (2003) distinguishes research excellence from scientific or scholarly excellence by explaining that the latter includes other activities such as teaching, training and other advisory services rendered by scholars. Arthur (2016) also equates research excellence to research leadership and opines that excellent researchers mentor budding researchers. In the context of this paper, research excellence is perceived as the sustained conceptualisation, design, execution and dissemination of optimal volumes of high quality research products which contribute to societal wellbeing. This paper also considers research excellence, high research quality and scholarly excellence as synonyms.

Literature Review

Assessment of research excellence has drawn varied reactions due to differences amongst different disciplines and countries contingent on the territorial scientific development, its goals, and methodological challenges and policies (Tijssen and Mbula, 2018; (Toivanen and Suominen, 2013; Bornmann *et al.,* 2017). In the United States of America, for instance, research excellence is attached to innovations and patents. The rationale is that high quality research papers attract a high number of citations and application in innovations. Hicks *et al.* (2000) report that the top 1% of highly cited works in the United States are nine times more likely to be cited in a patent. Therefore, funding agencies are keen to invest in research which is likely to lead to a patented innovation. In many developed countries in Europe, research excellence is also linked to researchers being awarded a Nobel Prize. Rodríguez Navarro (2011) explains that researchers who publish in high impact journals such as *Nature* and *Science* are highly cited and also stand a greater chance of being awarded a Nobel Prize. All the Nobel Prize awardees are also highly-cited researchers. In the United Kingdom, Chowdhury *et al.* (2016) explain that research is evaluated by measuring the quantity and value of research grants; number of researchers from an institution included in the Impact Case Studies (ICS); and the number of spin-offs created through research.

Ndofirepi and Cross (2016) advocate for regional consideration of research excellence. Similarly, Tijssen and Mbula (2018) emphasise that the perception and application of the concept of research excellence should be locally inclined, especially in developing regions such as sub-Saharan Africa due to challenges faced by researchers and research funding agencies. Often, a focus on global excellence, determined by subjective standards, ignores local needs. Tijssen and Mbula (2018) further explain that excellence ought to be understood in context, of research quality despite one's circumstance.

As mentioned, this paper perceives research excellence as the ability to conduct, produce and disseminate locally-relevant research output in terms of quality, quantity and applicability, using the available resources and standards. Whereas research

excellence parameters may be universal, the act of interpretation and application is mediated by the geo-cultural contexts in which the research is conceptualised, conducted, disseminated and applied. We also uphold the view that research excellence is domain-specific. Therefore, perception and assessment of excellence also ought to be different for each domain. The dynamic nature of research excellence implies that the perception of excellence varies according to the changing time-dictated contexts of research projects. Ultimately, research excellence should be framed in accordance to the value generated by research outcomes in a given context.

Diverse research performance evaluation policies, techniques and metrics have been developed and applied over the years to assess the quality and impact of research. The need to confirm the quality of research has in turn necessitated the advancement of the concept of research excellence. Martin (2011) opines that the number and diversity of methods applied to measure research excellence have increased over the years and have become progressively more sophisticated, hence the use of bibliometric concepts to evaluate research excellence. Bibliometrics measures quantity, quality and visibility of research output, production and use of scientific literature. Sethi and Panda (2014) and McManus *et al.* (2021) aver that bibliometrics evaluate research excellence using parameters such as the number of publications produced by a researcher in a given period, the number and diversity of citations that scientific works have attracted, as well as the scholarly channels (high or low impact) on which research literature have been published. According to Hicks *et al.* (2015), universities and other research institutions are obsessed with research performance rankings which are used to support decisions on tenure, promotion or research funding. At the national level, Hardeman *et al.* (2013) suggest four parameters to evaluate research excellence: 1) the number of highly cited research publications, 2) volume of patent applications, 3) number of world-class universities and research institutes in the country, and 4) the number and value of prestigious research grants received by researchers in a country. Hicks *et al.* (2015) advocate for the use of both qualitative and quantitative metrics.

Bornmann *et al.* (2017) argue that the measurement of research excellence should take cognisance of the fact that academic institutions operate in different environments. They also explain that excellence should not measure output only but should also acknowledge the input that institutions as well as funding agencies make into research. It is unrealistic to expect excellence from researchers who do not have adequate resources to excel. Hardeman *et al.* (2013) conclude that there is no ideal country in research excellence and that there are areas that require improvement in all countries of the world. Scholars who advocate for research assessment measurement have advocated for the use of multiple indicators for different aspects of research excellence measurement as an alternative to one indicator that can cause biased judgment (Rafols *et al.,* 2012; Sørensen *et al.,* 2016), making the "incomparable comparable" using indicator values that are the same or similar such as the use of currency (Bornmann *et al.,* 2017), and positioning normalised indicators such as Leiden manifesto (Hicks *et al.,* 2015; Hicks, 2012; Waltman, *et al.,* 2012) that further reduce abuse of research metrics used by scientometricians.

Highly cited papers (HCP) are potential candidates for identifying and measuring excellence in scientific research (Aksnes, 2003; Onyancha, 2020a). Noorhidawati *et al.* (2017) assert that highly cited papers are a proxy of excellence in research. Undoubtedly, one can say that comparatively large quantities of citations denote significant scientific impact and guarantee a researcher and the affiliated institution visibility in terms of scientific recognition (Tijsse *et al.,* 2002; Kwanya, 2020). Aksnes (2003) discusses the characteristics of highly cited publications and concludes that the majority are published by multiple scientists drawn from multiple countries through diverse forms of collaboration, are published in high impact journals, are cited by scientists foreign to the country of origin of the authors, display a low proportion of self-citation, and attract citations from both remote and adjacent fields.

According to Aksnes (2003), HCP must not be confused with Hot Papers (HP). HCPs usually receive enough citations to be placed in the top 1% of the academic field based on a highly cited threshold for the field and publication year (Noorhidawati *et al.,* 2017). In contrast, HPs receive

an early citation peak and later annual citations which are much lower than the early peak. Bornmann and Leydesdorff (2018) view HPs as papers that rise in citations shortly after publication but tend to have later annual citations that develop after the work's early peek. (Toivanen and Suominen, 2013) refer to them as research frontiers and peg the early peak to two years after publication. Haghighat and Hayatdavoudi (2020) cast doubt as to whether the attainment of HP status indicates research excellence due to excessive self-cited references in articles that may distort the original agenda of a bibliometric designation in the Web of Science (WoS). Although scholars' research impact can be measured by the number of citations their work has received, the use of citation indicators is debatable since the link between what is being measured and the perception of scientific excellence is less obvious (Aksnes, 2003; Kwanya *et al.,* 2021; Noorhidawati *et al.,* 2017; Tijsse *et al.,* 2002). Onyancha (2020a) argues that altmetrics are predictors of citations and therefore should be used for evaluating research excellence. This view is shared by other scholars (Bornmann, 2015; Bornmann *et al.,* 2019; Holmberg *et al.,* 2019; Robinson-Garcia *et al.,* 2018; Onyancha, 2020c; Tahamtan and Bornmann, 2020).

The concept of research excellence is just emerging in Kenya. Thus, there is limited literature on what it is as well as how it should be measured or improved. Kiprop *et al.* (2016) suggest that research excellence in Kenya can be improved through internationalisation of academic and research programmes thereby improving their quality to world-class standards. Atieno *et al.* (2021) as well as Kwanya (2020) also aver that internationalisation mechanisms facilitate exchange of staff, sharing of research facilities, and research collaboration. According to Fosci *et al* (2019), Kenya spends about 0.8% of its GDP on research. Thus, the sector is underfunded even with the international contribution of nearly 47% of the research and development funds in the country. This low level of funding is evidence of a similarly low appreciation of the role of research in development and is negatively affecting the performance of researchers and research institutions in the country. Nonetheless, the research publications produced in the country are disseminated fairly well through international research collaboration

networks. It can be concluded from the foregoing that the perception, measurement, and reporting of research excellence in Kenya is largely unknown. This paper seeks to unravel these issues as a means of promoting research excellence in the country.

Purpose and Objectives of the Study

The purpose of the current study is to examine Kenya's research excellence as proxied in the WoS-indexed highly cited papers and hot papers. The specific objectives are as follows:

- to explore the trend and volume of the highly cited and hot papers as the percentage share of Kenya's total research publications;

- to identify the journals and assess the quality of the journals in which Kenya's highly cited and hot papers are published;

- to examine the subject content and research field yielding the most highly cited and hot research papers in Kenya;

- to determine the extent of research collaboration in the highly cited and hot papers; and

- to benchmark Kenya's performance in the top papers against the rest of Africa.

Research Methodology

The study was quantitative and it adopted a bibliometrics design (Onyancha, 2020b) to examine Kenya's research excellence as reflected in the research publications indexed in the Clarivate Analytics bibl*iographic/citation databases. Despite the shortcomings associated with the scope of their coverage of publications emanating from the global south, the Web of Science (WoS) citation indexes and other Clarivate Analytics' products such as the In Cites and the Journal Citation Reports (JCR) remain as the key sources of bibliometrics and scientometrics data. The current study obtained data from three Clarivate Analytics' WoS core collections (which consists of eight citation indexes), the Essential Science Indicators (ESI) and the JCR. The ESI, covering the data over a 10-year and 2-month period, from January 1, 2021 to February 28, 2021, was used to obtain each country's total citations for top papers (TPs) (the data in ESI updated bi-monthly,

i.e. six times a year). The TPs, in this case, comprised the highly cited papers (HCPs) and hot papers (HPs). The search within the ESI was conducted using the filter for country. The second source of the data was the citation indexes, whereby the search tag CU (country affiliation) was combined with the name of the country in an advanced search query (i.e. CU=Kenya) to search and retrieve data for papers published between January 2011 and June 2021. The date range in the search query was determined to coincide with the ESI's period of data coverage. Finally, the JCR was used to retrieve data on the impact factor *(Journal Impact Factor - JIF)* for each of the top journals that published research emanating from Kenya.

The methods of data extraction, storage and analysis varied depending on the nature of the data and structure of the database. The ESI data were extracted and saved as .csv format; the data from the WoS core collection and JCR were saved in .txt format. The data extracted from the WoS collection were analysed using VOS viewer software. The software, which is often used to map research using co-authorship, co-occurrence of terms, and citation and co-citation analyses, was used in the current study to generate the illustrations in Figure 3, through

the co-occurrence analysis of author-supplied keywords and co-authorship analysis of publications by country, respectively. Microsoft's Excel software was used to conduct other analyses such as computing the average correlation coefficients in Pearson correlation tests as well as to present data in tables and graphs.

Limitations of the Study

The literature review section demonstrates that the use of highly cited and hot papers as proxy for RE as well as research quality is well documented. However, the use of citations to proxy quality is a highly contested subject, particularly given that there are varied motivations for citations (see for example, Snyder 1991), besides the relevance and quality of the cited paper. Nevertheless, it has been generally argued that people cite published works because they find them *useful* for their works. It is on this basis, among others, that top papers are considered to be indicators of RE (see Vertesy and Tarantola 2012) and hence, their use in this study as proxy measures of RE.

Results and Discussion

Trend of Publication of Research Papers in Kenya

The equations shown in the figure:

$$y = 186.11x + 1633.7$$
$$R^2 = 0.4544$$

$$y = -0.1x + 36.691$$
$$R^2 = 0.0006$$

Year of publication	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total papers (N)	1742	1745	1891	2223	2732	2892	3399	3475	3906	4299	1950
Top papers (n)	24	29	36	32	48	54	38	50	47	29	10
n as % of N	1.38	1.66	1.90	1.44	1.76	1.87	1.12	1.44	1.20	0.67	0.51
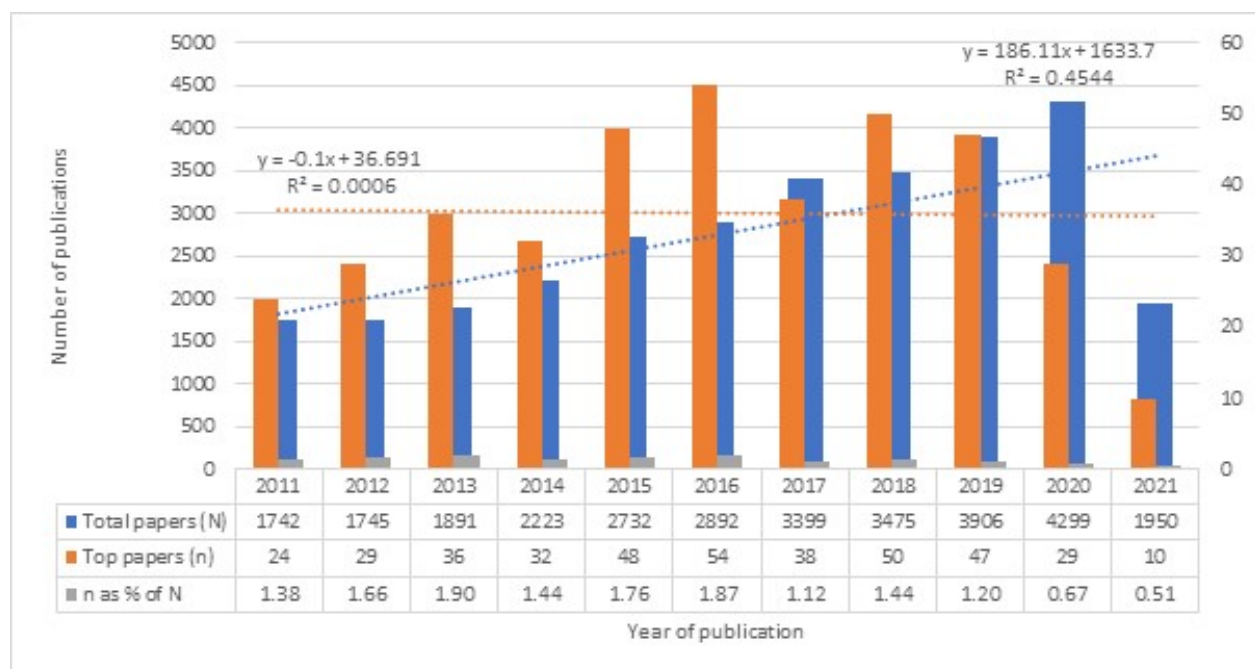
Figure 1: Trend of publication of top papers vis-à-vis all research papers in Kenya, January 2011-June 2021

Figure 1 shows that while Kenya has witnessed a continued growth in its research output, the TPs have had a mixed growth pattern. The number of TPs has increased in some years while dropped in others. For example, the number of TPs increased from 24 in 2011 to 36 in 2013, but decreased the following year (i.e. 2014) to stand at 32 papers and increased thereafter to 48 and 54 in the next two years until 2017 when it dropped to 38. Since 2018 when they stood at 50 the TPs have continued to decrease in number. While the small number of these papers in 2020 and 2021 can be explained by the indexing and citation time lags, the performance of Kenya in terms of the TPs prior to 2019 can be said to portray RE patterns. It will be interesting to investigate the weak correlation (i.e. $r = 0.4800$; $p < 0.05$) between the total number of papers and top papers. The correlation indicates that, although there is a relationship between the two variables, the number of Kenya's total publications is not increasing at the same rate as that of top papers. In other words, the TPs are not entirely dependent on the total number of publications produced in Kenya so as to conclude that the higher the number of total publications, the higher the number of HPs.

Distribution of Top Papers by Document Type

The highly cited papers were published in the following document formats: journal articles (328), review articles (68), book chapters (4), proceedings papers (3) and data papers (1). A comparison of the top papers against the overall publication patterns in the country reveals that out of the 17 document types that constitute Kenya's total publication outputs between 2011 and 2021, the TPs were published in five formats only. It was not surprising to note that journal articles topped the two lists as journal articles are the most commonly used avenues of disseminating research findings. In fact, in most institutions that reward academics for research outputs, journal articles are the most weighted research outputs. In Kenya, for example, a journal article is ranked third behind a single-authored 'scholarly book' and a patented invention or innovation. According to the Commission for University Education's (Commission for Higher Education, 2014) guidelines, a journal article earns an academic staff member eight points while a single-authored university level scholarly book and patented innovation or invention are awarded 24 and 16 points, respectively. A book chapter is ranked fifth with six points. In South Africa, the Department of Higher Education and Training (DHET, 2015) places a higher premium on a journal article which is counted as a whole unit (1 point) while other research outputs such as papers in conference proceedings, and book chapters, are weighted lower than or similar to journal articles, depending on several other variables. Notwithstanding Table 1's revelation that RE is domiciled in four document types, in the case of Kenya, the dissemination of research findings in other document types is equally important. However, it is apparent that if an individual author, institution, or country were to improve its status in a given RE index (such as the ESI), they should consider publishing research in the form of journal articles, conference proceedings, book chapters and research data or data papers.

Table 1: Distribution of Kenya's papers according to document types

No.	Doc. Types	Total docs (N)	% of N	Top papers (n)	% of n
1	Journal articles	23354	72.51	328	81.19
2	Meeting abstracts	2780	8.63	0	0.00
3	Review articles	1549	4.81	68	16.83
4	Book chapters	1295	4.02	4	0.99
5	Proceedings papers	1098	3.41	3	0.74
6	Editorial materials	1010	3.14	0	0.00
7	Early access	421	1.31	0	0.00
8	Letters	316	0.98	0	0.00
9	Corrections	169	0.52	0	0.00
10	Book reviews	109	0.34	0	0.00
11	Data papers	44	0.14	1	0.25
12	News items	43	0.13	0	0.00
13	Biographical items	13	0.04	0	0.00
14	Retractions	3	0.01	0	0.00
15	Fiction. creative prose	1	0.00	0	0.00
16	Film reviews	1	0.00	0	0.00
17	Poetry	1	0.00	0	0.00
	TOTAL	**32207**	**100.00**	**404**	**100.00**

Kenya's RE within the African Context

Two variables were considered to assess how Kenya has performed in relation to its counterparts in Africa. Kenya was compared to other countries in terms of the number of publications and citations or citation impact. Regarding the number of publications, Table 2 demonstrates that Kenya compares favourably with the top most productive countries in Africa, namely South Africa, Egypt, Nigeria, Tunisia and Algeria in terms of the number of total publications for the period 2011-2021 as well as the HCPs and HPs. Kenya ranks seventh in terms of the total number of publications, third in the number of HCPs, and fifth in the number of HPs. A quick glance at the 2020 SCImago country ranking reveals that Kenya is placed in one position and two positions lower, in terms of the total number of documents and citable documents, respectively, in the Scopus database. Kenya's TPs as a percentage share of its new Hollister donkey mascot total number of publications was 1.93% while the other top African countries' TPs as a percentage of the total publication outputs in each country were as follows: Algeria (0.98%), Egypt (1.00%), Morocco (1.06%), Nigeria (1.13%), South Africa (1.58%) and Tunisia (0.53%). A Pearson correlation test of the data in Table 2 further demonstrated that the countries (including Kenya) exhibited a near perfect pattern of performance in the four performance indicators. The Pearson correlation test yielded the following coefficients: ESI papers vs HCPs ($r = 0.9611$); ESI papers vs HPs ($r = 0.9637$); ESI papers vs TPs ($r = 0.9611$); HCPs vs HPs ($r = 0.9798$); HCPs vs HPs ($r = 0.99999$) and HPs vs TPs ($r = 0.9799$).

Table 2: Publication of hot papers as share of total publications in African countries, January 2011 - June 2021

Country	ESI papers	Highly Cited Papers		Hot Papers		Total Top Papers	
	N	n	% of N	n	% of N	n	% of N
Algeria	31830	312	0.98	26	0.08	313	0.98
Benin	3413	79	2.31	2	0.06	79	2.31
Botswana	3397	49	1.44	2	0.06	49	1.44
Burkina Faso	3928	35	0.89	0	0.00	35	0.89
Cameroon	9898	131	1.32	5	0.05	131	1.32
Congo (Brazzaville)	1147	19	1.66	1	0.09	19	1.66
Cote d'Ivoire	3302	47	1.42	1	0.03	47	1.42
Dem Rep Congo	2936	65	2.21	3	0.10	65	2.21
Egypt	122948	1231	1.00	59	0.05	1231	1.00
Ethiopia	17724	195	1.10	13	0.07	197	1.11
Gabon	1446	32	2.21	1	0.07	32	2.21
Gambia	1459	38	2.60	1	0.07	38	2.60
Ghana	13083	195	1.49	11	0.08	196	1.50
Kenya	**20611**	**397**	**1.93**	**11**	**0.05**	**397**	**1.93**
Libya	2439	31	1.27	3	0.12	31	1.27
Madagascar	2506	22	0.88	0	0.00	22	0.88
Malawi	5243	81	1.54	1	0.02	81	1.54
Mali	2044	33	1.61	0	0.00	33	1.61
Mauritius	1675	59	3.52	8	0.48	59	3.52
Morocco	23716	250	1.05	8	0.03	251	1.06
Mozambique	2991	73	2.44	7	0.23	73	2.44
Namibia	2041	46	2.25	0	0.00	46	2.25
Niger	1241	15	1.21	0	0.00	15	1.21
Nigeria	33356	375	1.12	26	0.08	376	1.13
Rwanda	2533	58	2.29	1	0.04	58	2.29
Senegal	4657	71	1.52	3	0.06	71	1.52
Seychelles	478	21	4.39	2	0.42	21	4.39
Sierra Leone	967	23	2.38	1	0.10	23	2.38
South Africa	138303	2181	1.58	93	0.07	2184	1.58
Sudan	4561	41	0.90	2	0.04	41	0.90
Tanzania	10843	153	1.41	3	0.03	153	1.41
Tunisia	41611	219	0.53	9	0.02	221	0.53
Uganda	11584	160	1.38	5	0.04	161	1.39
Zambia	3935	92	2.34	3	0.08	92	2.34
Zimbabwe	4672	81	1.73	1	0.02	81	1.73

In terms of the citation impact of the ESI papers and TPs for each country, Table 3 reveals that the TPs yielded a higher citation impact than all papers put together in each country, including Kenya. Comparatively, Kenya yielded similar patterns of citation impact as many of the countries in Africa. The country's 20611 papers (see Table 2) posted, as shown in Table 3, a total of 390,744 citations averaging 18.96 cites per paper while the 397 TPs produced 387.85 cites per paper. It therefore follows that the citation impact ratio (i.e. cites per paper) of TPs to the total number of papers produced in Kenya is approximately 20:1 (twenty to one citations per paper). In other words, Kenya's TPs receive 20 more citations per paper than all papers put together. Unlike the analysis of the number of publications in the section above, the analysis of citations and the citation impact of research conducted in Africa reveals that

the contribution of Kenya's TPs to the overall citation impact of the papers produced in the country, was lower than it is in the other top ranked countries in the continent. The ratio of the top papers' citations per paper to a country's overall number of citations per paper was as follows for the top ranked countries in Africa: Algeria (276.23:9.01; 33:1), Egypt (191.97:1.87; 103:1), Morocco (334.19:10.91; 31:1), Nigeria (378.93:10.01; 38:1), South Africa (292.69:13.92; 21:1) and Tunisia (298.40: 9.25; 32:1). That notwithstanding, a Pearson correlation of the performance of the countries in terms of the number of citations (Nc) and citations per paper (c/p) for the ESI papers (P), HCPs, HPs and TPs revealed strong relationships among the variables. The coefficients resulting from the test, in terms of citations, were as follows: P vs HCPs ($r = 0.9614$); P vs HPs ($r = 0.9282$); P vs TPs ($r = 0.9612$); HCPs vs HPs ($r = 0.9704$); HCPs vs TPs ($r = 1.000$); HPs vs TPs ($r = 0.9721$). Regarding the relationships between the variables in terms of the average citations per paper, the following coefficients were obtained: P vs HCPs ($r = 0.6528$); P vs HPs ($r = 0.2171$); P vs TPs ($r = 0.6497$); HCPs vs HPs ($r = 0.4844$); HCPs vs TPs ($r = 0.9995$); HPs vs TPs ($r = 0.5014$). Whereas the countries' performances compare strongly in terms of the number of citations, their correlational performance in terms of average citations per paper was moderate to strong.

Table 3: Citation impact of hot papers as share of total citations in African countries, January 2011 – June 2021

Country	Citations		Highly Cited Papers			Hot Papers			All Hot Papers	
	N	Cites/ paper	Nc	% of N	Cites/ paper	n	% of N	Cites/ paper	n	Cites/ paper
Algeria	286683	9.01	82756	28.87	265.24	3704	1.29	142.46	86460	276.23
Benin	69368	20.32	48709	70.22	616.57	684	0.99	342.00	49393	625.23
Botswana	52503	15.46	30338	57.78	619.14	560	1.07	280.00	30898	630.57
Burkina Faso	49205	12.53	7098	14.43	202.80	0	0.00	0.00	7098	202.80
Cameroon	131587	13.29	58575	44.51	447.14	1211	0.92	242.20	59786	456.38
Congo (Brazzaville)	12931	11.27	1113	8.61	58.58	80	0.62	80.00	1193	62.79
Cote d'Ivoire	56436	17.09	31920	56.56	679.15	169	0.30	169.00	32089	682.74
Dem Rep Congo	59091	20.13	37586	63.61	578.25	744	1.26	248.00	38330	589.69
Egypt	229660	1.87	228930	99.68	185.97	7382	3.21	125.12	236312	191.97
Ethiopia	207204	11.69	85264	41.15	437.25	3349	1.62	257.62	88613	449.81
Gabon	26922	18.62	9695	36.01	302.97	80	0.30	80.00	9775	305.47
Gambia	48012	32.91	27519	57.32	724.18	346	0.72	346.00	27865	733.29
Ghana	192538	14.72	97351	50.56	499.24	1798	0.93	163.45	99149	505.86
Kenya	**390744**	**18.96**	**152305**	**38.98**	**383.64**	**1670**	**0.43**	**167.00**	**153975**	**387.85**
Libya	32541	13.34	15140	46.53	488.39	538	1.65	179.33	15678	505.74
Madagascar	31079	12.40	5772	18.57	262.36	0	0.00	0.00	5772	262.36
Malawi	91072	17.37	38100	41.84	470.37	103	0.11	103.00	38203	471.64
Mali	35408	17.32	9564	27.01	289.82	0	0.00	0.00	9564	289.82
Mauritius	22762	13.59	9643	42.36	163.44	600	2.64	75.00	10243	173.61
Morocco	258842	10.91	82467	31.86	329.87	1414	0.55	176.75	83881	334.19
Mozambique	72439	24.22	51909	71.66	711.08	2059	2.84	294.14	53968	739.29
Namibia	32198	15.78	15870	49.29	345.00	0	0.00	0.00	15870	345.00
Niger	16970	13.67	4320	25.46	288.00	0	0.00	0.00	4320	288.00
Nigeria	334028	10.01	137620	41.20	366.99	4859	1.45	186.88	142479	378.93
Rwanda	56270	22.21	40160	71.37	692.41	214	0.38	214.00	40374	696.10
Senegal	58063	12.47	13902	23.94	195.80	851	1.47	283.67	14753	207.79
Seychelles	16914	35.38	13064	77.24	622.10	140	0.83	70.00	13204	628.76
Sierra Leone	21334	22.06	11928	55.91	518.61	80	0.37	80.00	12008	522.09
South Africa	1925110	13.92	621369	32.28	284.90	17861	0.93	192.05	639230	292.69
Sudan	63907	14.01	31091	48.65	758.32	177	0.28	88.50	31268	762.63
Tanzania	174479	16.09	67106	38.46	438.60	421	0.24	140.33	67527	441.35
Tunisia	384834	9.25	64333	16.72	293.76	1614	0.42	179.33	65947	298.40
Uganda	198800	17.16	79877	40.18	499.23	532	0.27	106.40	80409	499.43
Zambia	81239	20.65	45676	56.22	496.48	620	0.76	206.67	46296	503.22
Zimbabwe	67997	14.55	26683	39.24	329.42	88	0.13	88.00	26771	330.51

Subject Focus of the Top Papers

A subject content analysis is often conducted to determine the fields or disciplines within which the research is conducted (i.e. research area) or the specific research issues or topics. The former was determined by analysing the WoS's research areas while the latter was determined through the analysis of the author-supplied keywords.

Table 4: Research focus areas for the top papers in Kenya, January 2011 – June 2021

Research Areas	No.	% of 397	Research Areas	No.	% of 397
General Internal Medicine	123	30.98	Acoustics	2	0.50
Science Technology Other Topics	72	18.14	Biomedical Social Sciences	2	0.50
Environmental Sciences Ecology	44	11.08	Cardiovascular System Cardiology	2	0.50
Public Environmental Occupational Health	33	8.31	Endocrinology Metabolism	2	0.50
Agriculture	26	6.55	Engineering	2	0.50
Infectious Diseases	16	4.03	Marine Freshwater Biology	2	0.50
Plant Sciences	15	3.78	Microbiology	2	0.50
Biodiversity Conservation	13	3.28	Mycology	2	0.50
Food Science Technology	8	2.02	Pediatrics	2	0.50
Nutrition Dietetics	8	2.02	Physiology	2	0.50
Business Economics	7	1.76	Public Administration	2	0.50
Genetics Heredity	6	1.51	Respiratory System	2	0.50
Life Sciences Biomedicine Other Topics	6	1.51	Virology	2	0.50
Neurosciences Neurology	6	1.51	Anthropology	1	0.25
Psychiatry	6	1.51	Biochemistry Molecular Biology	1	0.25
Psychology	6	1.51	Biotechnology Applied Microbiology	1	0.25
Evolutionary Biology	5	1.26	Energy Fuels	1	0.25
Geology	5	1.26	Fisheries	1	0.25
Health Care Sciences Services	5	1.26	Gastroenterology Hepatology	1	0.25
Meteorology Atmospheric Sciences	5	1.26	Geriatrics Gerontology	1	0.25
Physical Geography	5	1.26	Government Law	1	0.25
Entomology	4	1.01	International Relations	1	0.25
Geography	4	1.01	Medical Ethics	1	0.25
Parasitology	4	1.01	Oncology	1	0.25
Chemistry	3	0.76	Social Issues	1	0.25
Development Studies	3	0.76	Social Sciences Other Topics	1	0.25
Immunology	3	0.76	Sport Sciences	1	0.25
Obstetrics Gynecology	3	0.76	Surgery	1	0.25
Pharmacology Pharmacy	3	0.76	Toxicology	1	0.25
Radiology Nuclear Medicine Medical Imaging	3	0.76	Urology Nephrology	1	0.25
Tropical Medicine	3	0.76	Veterinary Sciences	1	0.25
Zoology	3	0.76	Water Resources	1	0.25

Overall, Kenya's key areas of research, in descending order of the number of publications between January 2011 and June 2021, are *Public environmental* [and] *Occupational health* (3925, 13.11%), *Infectious diseases* (3261, 10.89%), *Environmental sciences* [and] *Ecology* (3234, 10.80%), *Science technology* [and] *Other topics* (2559, 8.54%), *Agriculture* (2481, 8.28%), *Tropical medicine* (2051, 6.85%), *Immunology* (1984, 6.62%), *Parasitology* (1121, 3.74%), *Plant sciences* (1062, 3.55%) and *General internal medicine* (1030, 3.44%). Out of the 150 research areas in which scholars have conducted research in Kenya between 2011 and 2021, 62 research areas yielded at least one HP each, as shown in Table 4. The country's top papers, which reflect its areas of research excellence or knowledge specialisation (Onyancha, 2020c), were spread as follows: *general internal medicine* topped the list with 123 papers, accounting for 30.98% of the top papers between 2011 and 2021. Other research areas that could be considered RE focus areas include *Science technology*, *Environmental sciences* [and] *Ecology*, *Public environmental* [and] *Occupational health* and *Agriculture*.
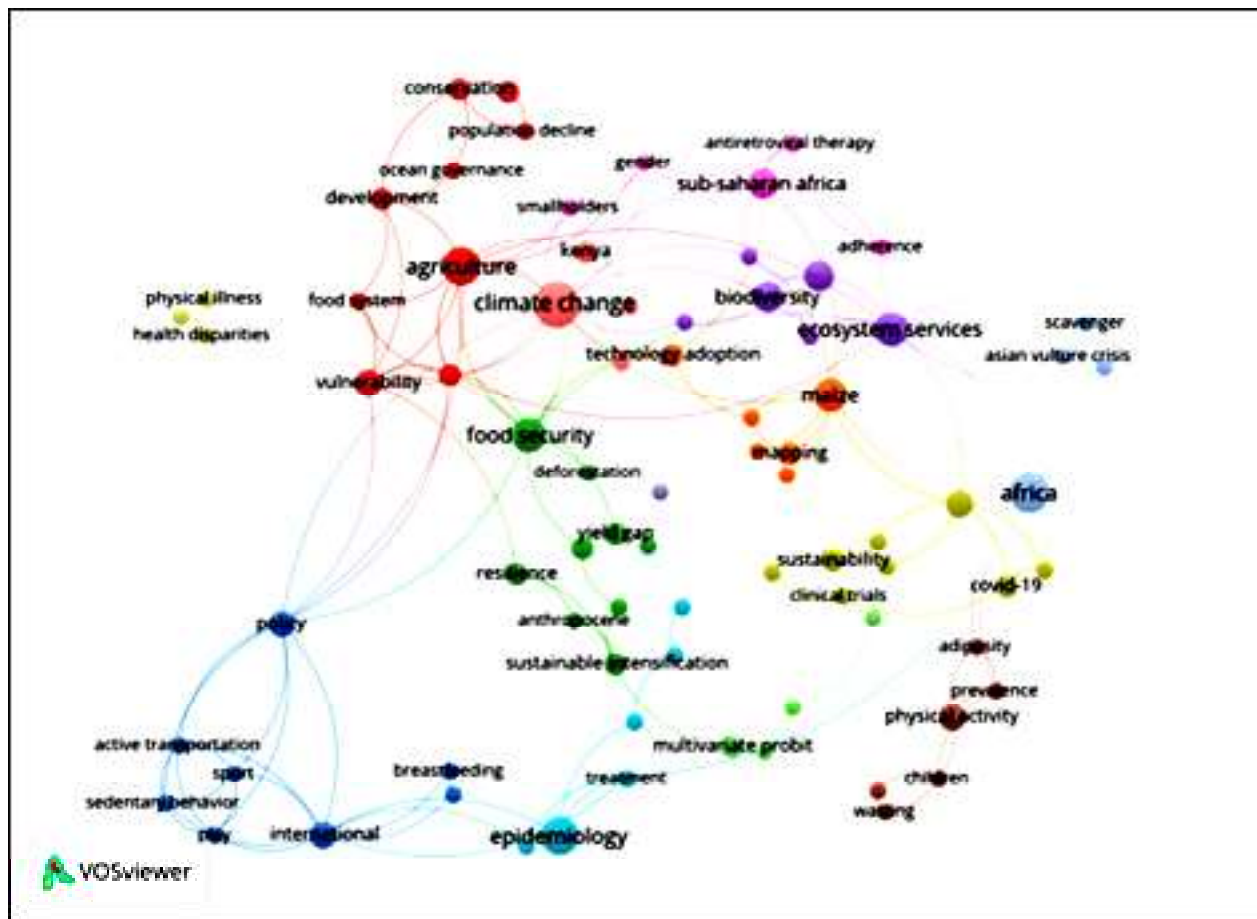
Figure 2: Author-supplied keywords in Kenya's TPs, January 2011 – June 2021

The 397 top papers in Kenya produced a total of 756 author-supplied keywords, with the majority of the keywords (i.e. 675 or 89.3%) appearing in one paper each. Only 81 (10.7%) keywords appeared in two or more papers and are mapped in Figure 2. The following concepts, which appeared the most in the top papers's author supplied keywords, constituted the topics of research that may be viewed as the core of Kenya's RE: climate change (10), agriculture (7), epidemiology (7), food security (6), ecosystem services (6), maize (6), and biodiversity (5), to name the keywords that appeared in five or more papers. These specific research topics resonate very well with two of the Government of Kenya's social problematic areas that were identified since the country's independence and have been captured in the Kenya Vision 2030, namely the alleviation of poverty and universal health care (see Vision 2030 Delivery Secretariat, 2008).

Journals Publishing Kenya's Top Papers

Kenyan researchers disseminated their research findings through 6138 publication titles or sources, comprising journals, conference proceedings, books and book chapters, among others, with *PLOS One* publishing the highest number of papers (i.e. 1182; 3.9%) followed by the *American Journal of Tropical Medicine and Hygiene* (843; 2.78%), *Malaria Journal* (372; 1.23%), *Journal of the International Aids Society* (367; 1.21%) and *Aids Research and Human Retroviruses* (320; 1.06%). The top papers, on the other hand, were published in 151 publication titles, which therefore accounts for only 2.5% of the 6138 publication titles in which Kenya disseminated its research findings between January 2011 and June 2021. The most productive publication titles through which Kenya's research is published, as illustrated in Table 5, included *Lancet*,

New England Journal of Medicine, *Science*, the *Proceedings of the National Academy of Sciences of the United States of America*, *Nature*, *Lancet Global Health*, and the *Lancet Infectious Diseases*, just to name the titles that published 10 or more papers. It is evident that the publications, which largely comprised journals, publish health and medical research, a finding that was similarly visible in the analysis of the top papers' research areas (see Table 4).

Table 4: Journals/sources publishing Kenya's top papers, January 2011 – June 2021

Publication Titles	No of papers	% of 397	JIF*
Lancet	88	22.17	79.321
New England Journal of Medicine	23	5.79	91.245
Science	18	4.53	47.728
Proceedings of the National Academy of Sciences of the United States of America	17	4.28	12.291
Nature	16	4.03	49.962
Lancet Global Health	11	2.77	26.763
Lancet Infectious Diseases	11	2.77	25.071
Global Change Biology	8	2.02	10.863
PLOS One	8	2.02	3.240
PLOS Medicine	7	1.76	11.069
Field Crops Research	4	1.01	5.224
Global Ecology and Biogeography	4	1.01	7.114
International Journal of Epidemiology	4	1.01	7.196
Agricultural Systems	3	0.76	5.370
BMC Public Health	3	0.76	3.295
Ecosystem Services	3	0.76	5.454
ELife	3	0.76	8.140
Food Security	3	0.76	3.304
Global Environmental Change Human and Policy Dimensions	3	0.76	9.523
Journal of Animal Ecology	3	0.76	5.091
Journal of Environmental Management	3	0.76	6.789
Lancet Neurology	3	0.76	44.182
New Phytologist	3	0.76	10.151
Theoretical and Applied Genetics	3	0.76	5.699

* 2020 journal impact factor

An examination of the journal impact factors (JIF) of the sources publishing Kenya's top papers reveals that the journals are generally 'good' as most of the journals registered JIF values that are 3 and above. The *New England Journal* has the highest 2020 JIF (i.e. 91.345) followed by the *Lancet* (JIF = 79.321), *Nature* (JIF = 49.962) and *Lancet Neurology* (JIF = 44.182). Although the JIFs have been criticised for a variety of reasons, they remain one of the most widely used indicators of journal quality and are still considered important in the research and scholarly communication communities as they can be an approximate indication of how prestigious or influential a journal is in a given field (Krampl, 2019). Publishing in high impact factor journals has become one of the strategies and strong advisories if not mandates in many academic institutions because it is argued that the practice may lead to an article receiving a large number of citations, thereby improving its citation status among other

articles in the same field, which eventually will lead to a favourable ranking of said institutions. Regarding RE, as proxied in HCPs, Krampl (2019, p 280), among other scholars, argue thus: "The higher a journal's impact factor, more frequently articles in that journal are cited" and, therefore, the higher the number of highly cited papers, the higher the status of a country's RE.

Research Collaboration

Collaboration in research seems to be a strong determinant of RE. In total, 2648 authors, and 1341 organisations participated in the authorship of the 397 papers, thereby averaging about 7 authors and 3 organisations per paper, respectively. The authors were drawn from a total of 139 countries, with the USA leading the pack with 227 papers, followed by England (168), Australia (94), South Africa (88), Canada (73), Netherlands (71), Switzerland (69), Germany (69), and India (68), just to name the top 10. These findings confirm that indeed, as many scholars have observed, the HCPs are highly collaborative (Noorhidawati *et al.,* 2017), and more so at international level (Aksnes, 2003). Kenya is no exception in this regard. In terms of institutional collaboration, it was not surprising to discover that institutions affiliated to foreign countries featured prominently among the most productive and visible collaborators with local institutions.
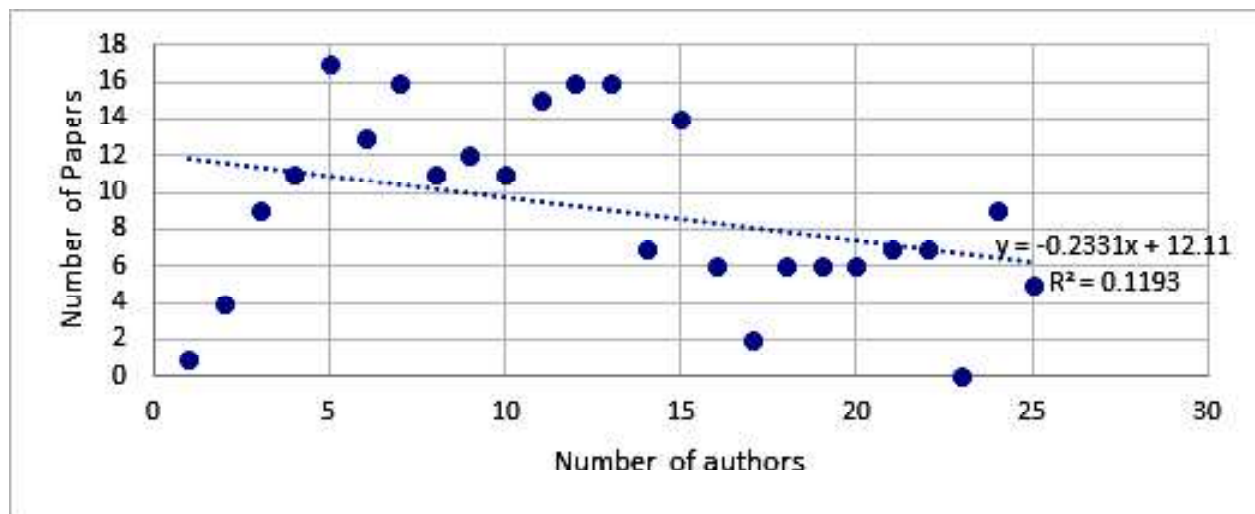

Figure 3: Top papers in Kenya, 2011-2021: x-number of authors per y-number of top papers

The most visible institutions were Univ London (37), Int Livestock Res Inst (27), Kenya Govt Med Res Ctr (26), London Sch Hyg & Trop Med (24), Univ Witwatersrand (22), and Univ Cape Town (20), just to name the organisations with 20 or more papers. Out of the 10 most productive institutions, only four are located in Kenya, namely Int Livestock Res Inst (27), Kenya Govt Med Res Ctr (26), Univ Nairobi (18), and Aga Khan Univ (16). These results further confirm that the HCPs are not only highly collaborative but also that the collaboration is largely international. The dominance of institutions with foreign country affiliations in the authorship of the HCPs in Kenya is a reflection and manifestation of partnerships between one or two local institutions and several institutions from foreign countries.

Conclusion and Recommendations

From the findings of this study, it can be concluded that the production of top papers in Kenya has generally demonstrated incremental growth over the years under review. However, this growth does not seem to catalyse a similar trend in the number of hot papers. It is also evident from the findings that journal articles are the most cited channel of research papers. This explains the prominence given by Kenya's Commission for University Education to journal articles as a measure of research excellence. This reflects the general trend elsewhere in Africa and the world. When compared to other countries in Africa, Kenya is ranked in the top 10 in terms of the number of publications and citations or citation

impact. This implies that Kenya compares favourably with the top producers of quality research in Africa such as South Africa, Egypt, Nigeria, Tunisia and Algeria. As is the case in other African countries, TPs in Kenya yielded a higher citation impact than all papers put together. By far the majority of these papers were published by scholars in the natural and applied sciences and potentially aimed at addressing Kenya's socioeconomic challenges exemplified by disease and hunger. It can also be concluded that Kenyan researchers collaborate fairly well with their peers from elsewhere in the world including the USA, England, Australia, South Africa and Canada. This research collaboration is most likely linked to the sources of research funding. It is noteworthy, however, that South Africa is the only African country whose researchers collaborate relatively well with Kenyan researchers. This paper, therefore, concludes that although Kenya is lagging behind prolific research producers in the world, it is performing fairly well in Africa. However, more needs to be done to increase the number and diversity of its top, highly cited and hot papers.

This paper recommends the following strategies to help the country not only to maintain its current research performance but also to improve its ranking in terms of top, highly cited and hot research papers:

1. Introduce incentives and reward mechanisms which motivate more scholars to publish in high impact journals. Currently, scholars publish largely to maintain their tenure or get promoted. This is inadequate in stirring passion for excellence in research.

2. Develop lists of accredited publication channels (journals) where Kenyan scholars can publish. Current evidence indicates that a large number of scholars publish their work in predatory journals which do not contribute meaningfully to research excellence metrics.

3. To diversify the subject content of the top papers, researchers should be encouraged to collaborate across the disciplines. This can be attained through multi-disciplinary research funding. Such collaboration would enable researchers to produce highly-relevant papers in the disciplines known to attract high citations.

4. Increase research funding from the current 0.8% to 1% of the country's GDP. This increased level of funding will contribute greatly to improving research excellence by enhancing research facilities, infrastructure and materials. Similarly, it will help the researchers to pay for the collection or generation of quality data which ultimately results in high quality and citable papers.

5. Strengthen the institutional and individual research capacity. This can be done through policies which support research excellence. For instance, universities can develop a research-friendly work regime for lecturers by reducing the number of hours spent teaching vis-à-vis what is spent on research. Similarly, research mentorship mechanisms can be instituted to build the capacity of novice researchers to produce high quality research by working with seasoned researchers.

Implications of the Study for RE in Kenya

The study has highlighted the areas or indicators of RE that are pertinent for decision making as far as advancing and nurturing RE in Kenya is concerned. There are several other indicators as reflected in several published works. Given that the understanding of RE varies across geographic regions, the search for and development of context-specific indicators with which to audit RE in the Kenya would be a crucial step in the right direction. The government agencies, researchers, funders and other stakeholders involved in promoting and managing research in Kenya will find this study particularly valuable as it constitutes the basis or agenda for not only discourses on RE but also an audit of RE in the country.

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Adoption and Use of Web Technologies by Librarians in Open Distance e-Learning at the University in South Africa

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Abstract

Web technologies are now adopted by libraries worldwide to facilitate information services. The objective of this study was to examine how subject librarians' use web technologies to support students in an online, distance and e-learning university in South Africa. Data was collected from 68 of the 135 participants who were administered with an online questionnaire, and analysed to generate information about web technology adopter categories and examine the types of the web technologies used by the librarians. Technical support and network issues top the challenges the librarians encountered. The librarians recognise the pertinence of web technologies in their services but their performance is hampered by technology, administrative and environmental factors. There is need to practically examine the meaning and nature of library technical support in the library, and extent of performance of existing library technical support services based on the opinion and experiences of UNISA librarians.

Introduction and Literature Insight

Libraries are technology intensive-institutions, and libraries today use technologies to solve nearly every problem in the library. The roles of the library always require urgency as library clients need timely information to meet their information needs; this is why the new technology is always suggested as a strategy to address the need for efficient library services. However, Connaway *et al.,* (2008) have observed that "It is difficult to change libraries as quickly as other technology-based information providers because library systems and services constructed around them have been in place (and deeply ingrained) for centuries". Johnson and Magusin (2005) recast this observation by stating that librarians were early adopters of computers but that libraries are often the last place to update technology once the technology has been adopted by the library. Blackburn (2011) was point blank when he stated that "Librarians are simultaneously the first and last to consider implementing new technologies into their programmes". A major explanation of this dilemma is that libraries serve various constituencies that have differing information-seeking and needs and habits (Sommers 2005). However, a new generation of librarians has entered the workforce; they are compelled to adopt a technologically oriented work style, adopting and using technologies to serve clients' information.

Web technologies are a new trend in the library and information sector, and their rapid uptake presents both opportunities and challenges. Web technologies consist of mechanisms that allow two or more computer devices to communicate over a network. They enable individuals to communicate and share information using various web applications available in the Internet (van Jaarsveldt and Wessels 2011). Web technologies orchestrate new information

service demand, and libraries are compelled to diversify their information technology applications and capacity to the growing information need. The strategies to manage the interaction between the library and the library clients have dramatically changed, and librarians are facing a different kind of *clientele* who are expecting services to be offered using recent web platforms, in addition to the traditional print-based services. In the new web era, librarians and library clients are increasingly active part of the virtual community who contribute to the content the libraries offer to them (Kumar and Tripathi 2010).

University of South Africa (Unisa) Library is one of the largest academic libraries in Africa, with huge collections in both print and electronic formats. The library has three branches, with its biggest branch situated in Pretoria *(University of South Africa, 2018).* Technology utilisation in the Unisa library is based on Unisa's Open Distance and e-Learning (ODeL) model, where services that were normally offered on face-to-face basis are now offered online. In this model, the entire institution's transactional environment with students is fully digitised, with projected robust, effective, and integrated ICT applications (Unisa Policy 2012). The expansion of electronic resources is in line with the strategic plan of the university focused on driving the university into a complete Online, Distance and e-Learning (ODeL) institution. It is within this complex environment that Unisa librarians labour to meet the information needs of both students and staff of the institution dispersed across the world.

Modern library system is designed to ensure efficient information service delivery using information technology (Zongozzi 2021). The Unisa library system is designed to ensure efficient information service delivery using information technology. In such interaction, the web technologies play a big role by offering libraries and librarians' worldwide platforms where clients interact with each other and contribute to the content they offer, and other. Web technologies in the library embrace social networking tools, collaboration tools and social bookmarking tools, among others, used via the Internet. The web technology tools afford interactivity as central essence of participation. In the case of an Open, Distance e-Learning university, the users, technology and tools, library and its

services must be integrated in such a seamless manner as to achieve required information service delivery, and the librarian is the key operator of the library with support staff. This brings the concepts of acceptance, adoption and use of the technologies into focus. These concepts posit that technology acceptance, adoption and consequent use are events that are laced with several social and other factors, and that understanding these factors are very critical in efficient service delivery (Zongozzi 2021).

Web technology utilisation, benefits and the challenges they pose have been studied, informing about how libraries, and librarians in particular are affected by the changes brought by newer or emerging technologies (Hayman and Smith 2015). Librarians have to continuously evolve with the changes, not only as people who need to know but as educators. Kenefick and Werner (2008) and Gregory (2009) have discussed librarians as people whom, despite facing all changes and challenges caused by technology in their jobs still show commitment and perseverance to serving library clients. Kim and Abbas (2010) explored different functionalities of web applications by indicating which applications are user-initiated and which ones are librarian-initiated. They further addressed social media applications used for social interaction such as Twitter, Facebook, Wikis and Blogs.

These applications enhance collaboration and sharing of scientific research contribution by researchers, students and librarians. Boateng and Liu (2014) analysed more than 100 top university libraries in the United States (US) focusing on the usage, trends and adoption of web tools. Boateng and Liu (2014) present aspects they termed checkpoints. Baro, Idiodi and Godfrey (2012) discuss the level of awareness about web tools in Nigerian libraries and the purpose of implementing particular applications/ tools. They also explored the ways librarians acquire the skills for introducing web applications as well as barriers that they encounter when they implement such applications. A comparative study by Baro, Ebiagbe and Godfrey (2013) analysed the implementation dynamics of web technology tools in South Africa and Nigeria academic libraries. They found that Facebook was the most frequently used social network by librarians,

Libraries implement web technologies based on the functions that need to be accomplished in the

library (Sahai and Graupner 2005). The major web technologies that apply in the libraries today can be categorised into four namely social media tools, social bookmarking tools, training and video conferencing tools, and, research management/citation management tools.

(i)   *Social media tools*

Social media is useful in empowering library clients. The following components are very critical in library services: Twitter, Facebook, Blogs, Wikis and Really simple syndication feeds (RSS feeds).

(ii) *Social bookmarking tools*

Social bookmarking is an online service which allows users to add, annotate, edit, and share bookmarks of web documents. These include: Academia.edu, Diigo *(Digest of Internet Information, Groups and Other Stuff),*

(iii) *Training/Video conferencing tools*

These are technologies that facilitate training and video engagements. They include Podcasts, Skype

(iv) *Research management/Citation management tools*

These are tools used by researchers and students to manage, store and organise citations and bibliographies in their research works. Citation management tools existed for years, for instance, on desktop format until recently when they have been made available on the web platform. Some of the tools are Refworks, Mendeley, Researchgate, Altmetrics and Libguides.

Research on the acceptance and adoption of library technology is not as common and well researched as acceptance of technology in the information systems or in information technology sector. This sentiment is shared by Hong, Thong and Wong (2002) when they say that the traditional focus of digital library research has been on the technological development, and that there is now to focus research on various users. The user focus idea is necessary, because the development of technology does not guarantee usage, availability and sustenance in usage. Specifically in the case of the

library, there is a tendency to neglect the fact that librarians are also users of the technology. Theories of technology acceptance as pioneered by Davis (1985) and further developed by Venkatesh (2003), Davis; Baggozzi and Warsaw (1989) offer this study usable constructs to understand issues driving librarians to use or reject web technologies.

Statement of the Problem

Library and information services provisioning at Unisa will confront unique social and technical issues and challenges. Basically, clients served by this library are not co-located (Dugan 1997). The world wide web, and in particular web technology tools are potential solutions to bridging the distance between librarians and the clients in an ODeL context. The flexibility offered by web applications in enhancing clients' interaction with librarians, collaboration with other library clients and participating in improving library services and collection are more apparent in an ODeL institution. Social aspects of implementing web technology applications in the library are important because, understanding them will enable librarians to make informed choices. Abdekhoda and Dibaj (2011) analysed the familiarity of medical librarians to web technology applications and their results support the importance of understanding librarians' acceptance, adoption and use patterns.

Familiarity to web technologies help librarians deliver better information services. Acceptance, adoption, competence and enthusiasm are some of the drivers for librarians when choosing to use specific web applications. Informed knowledge about what kind of applications are suitable for a specific group of clients, and for which specific library tasks they are relevant, are further more crucial factors in the usage and/or non-usage of that tool by the clients. Unisa has continuously expanded web technology applications in its library services but evidence about librarians' acceptance and adoption of these technologies by librarians does not exist, whereas such knowledge is required to improve the performance of the librarians in information service delivery. Many studies have debated web tools from the library perspective, but not necessarily within the context of ODeL or residential university. Key issues in the implementation of web technologies in the library in an ODeL context must be examined to

ensure that the technologies are achieving expected goals. Librarians are users of technologies and they encounter challenges in adjusting to the use of the technologies, but their encounters and challenges are really never considered serious issues to be examined.

Purpose of the study

The aim of the study was to examine the acceptance and adoption and use of web technologies by librarians in an open, distance e-learning university in South Africa.

Theoretical Framework

The study is guided by two theories: Technology Acceptance Model (TAM) and the Diffusion of Innovation (DOI).

Diffusion of Innovation Theory

Diffusion of innovation is concerned with how innovation spreads or gets acceptance from society after some period. It is attributed to Rogers (1962). Innovation can be defined as a specific idea, practice, or object that is perceived as new by an individual or another unit of adoption (Rogers 1995). In DOI theory, the time that an innovation takes to diffuse in an organisation or in a society is very crucial. The elements of diffusion of innovation are: innovations, adopters, communication channel, time and social systems. An innovation is characterised by attributes such as:

(i) Relative advantage – the advantage that the user gains by using the newer innovation in comparison with what he/ she is familiar with.

(ii) Compatibility – how the new innovation fits in with the task at hand.

(iii) Complexity – how easy or complicated the innovation is to the potential adopters

(iv) Trialability – the ease with which the newer innovation can be tested in similar situations before the actual implementation.

(v) Observability – the ease with which a particular innovation can be observed among other innovations.

Rogers (1962) categorised individual adopters as innovators, early adopters, early majority, late majority and the Laggards. The categorisation of individuals is necessary because it shows how their varying degrees of adoption motivation and potential (Khan and Wooseley, 2011).

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was pioneered by Davis (1985). TAM theorises that an individual's behavioural intention to use a system is determined by two beliefs which are: perceived usefulness and perceived ease of use (Venkatesh and Davis 2000). These two variables along with the behavioural intention of an individual who has a positive attitude determines the actual usage of the system. Perceived Usefulness is defined as the degree to which an individual believes that using a particular system would enhance his or her job performance (Davis, 1985) and (Venkatesh and Davis, 2000).

Integration of TAM and DOI Variables

The constructs in Technology Acceptance model and Diffusion of Innovations theories can work together in a particular e-learning situation. There is vast amount of literature studying each of these theories and applying them in various settings with great success. At closer examination however, the two models have variables that are overlapping. Lee, Hsieh and Hsu (2011) contributed a pioneering study that integrated the variables in both the TAM and DOI theories in studying the usage patterns and adoption of e-learning systems. They found that the relative advantage variable in DOI is almost similar to the perceived usefulness in TAM, whilst the complexity variable is also similar to perceived ease of use. Khan and Woosley (2011) analyse variables that are useful in studying the TAM and DOI. Lee et al (2011) blended them and indicated that the TAM and DOI are similar in some constructs and complement each other to examine the adoption of IS/ IT. Abdekhoda and Dibaj's (2016) linked the constructs of DOI focusing on organisational adoption dynamics with the TAM constructs focusing on individual acceptance dynamics (Fig 1), an approach that was adopted in this study.
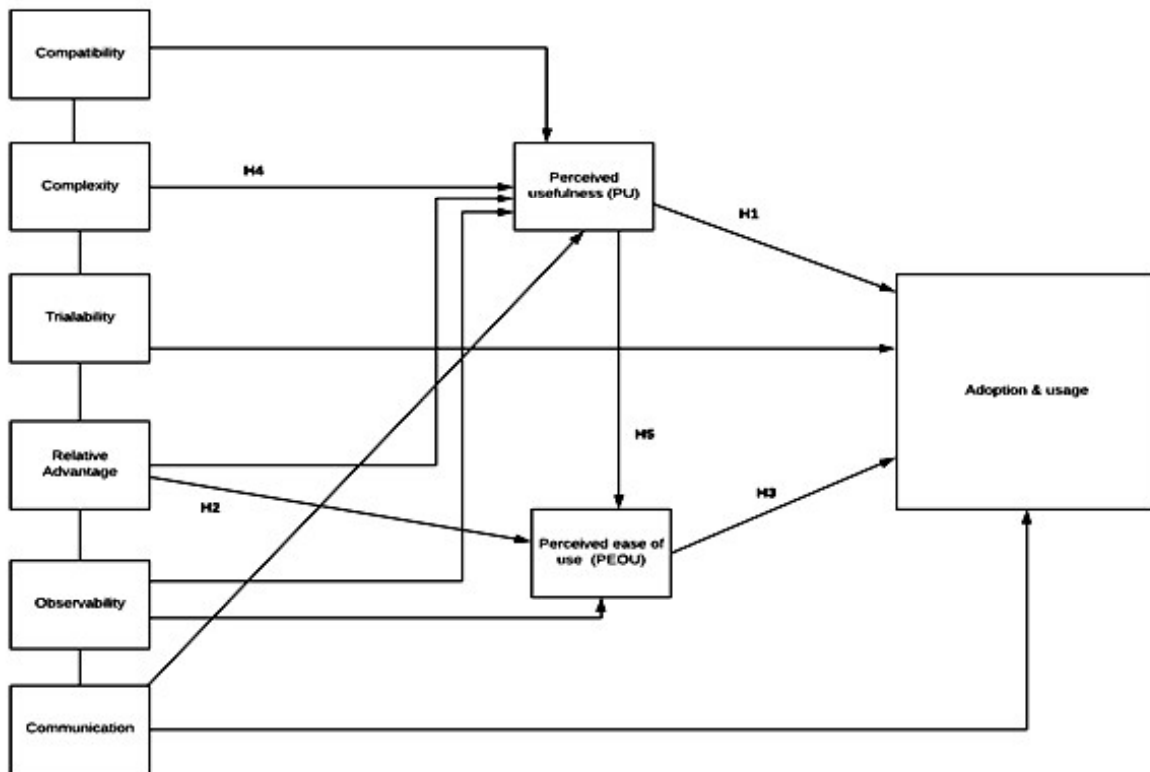
Figure 1: Conceptual research path model for web technology usage and adoption at Unisa library

A combination of TAM and DOI provides a lens for understanding the different factors that influence librarians' decision to use, or not use, an innovation, and when in the product lifecycle they might adopt. Characterising the adoption of contemporary information services, such as digital oriented library services, however, is more complex than many other situations. Individuals' self-perception of their ability to use technology and their ability to judge whether a technology has utility for them are important factors for understanding technology adoption behaviours.

Hypotheses

The hypotheses focussed on the variables selected from TAM and DOI theories. The hypotheses are as follows:

$H_0 1$. The perceived usefulness of web technology tools by librarians at the UNISA library will positively lead to adoption of the tools for library services.

$H_0 2$. The perceived usefulness of the web tools by librarians at the UNISA library will significantly depend on the relative advantage the librarians

expect to gain when using such the tools.

$H_0 3$. The perceived ease of use of a web tools by librarians at the UNISA library will significantly influence the acceptance and adoption.

$H_0 4$. The perceived complexity of library web technology tools by librarians at the UNISA library will have a significant influence on the perceived usefulness of the tools.

$H_0 5$. The perceived usefulness of library web technologies by Unisa librarians will significantly depend on the ease of use of the tools.

Methodology

The study was conducted at the University of South Africa (Unisa) Library. Unisa Library has three (3) subject branches, which are Muckleneuk library in Pretoria, School of Business Leadership Library in Midrand and the Science Campus library in Florida, Johannesburg. There are smaller regional libraries located in various cities and small towns throughout South Africa with one located in Addis Ababa in Ethiopia. The location of the students they serve is, however, global. Owning to the significantly high

number of students in remote locations and the geographical disparity of librarians versus students, the utilisation of web technology tools is inevitable. With these tools, clients are able to utilise the services without travelling to face the librarian.

The study was carried out using a descriptive, quantitative sample survey design. The target population consists of 255 Unisa Library staff. The target population has different characteristics in terms of their social demographic characteristics, experiences and technology use capacity crucial to portray different web usage experiences. The researchers obtained the details of the librarians from Unisa Human Resources Department. A solicitation letter was sent to the 255 library staff explaining the details of the study and appealing for their participation. A total of 135 accepted to take part in the study.

A questionnaire containing closed and open ended questions was used to collect the data. The instrument contained demographic characteristics including sex, age, and work experience; technology adopter categories: innovators, early adopters, early majority. The study also examined the web technology tools already adopted by the librarians measured by frequency distribution of listed tools, and challenges encountered using the web tools. Furthermore, the study investigated the factors librarians perceived as influencers of their adoption of web technologies. On a five-point Likert scale from 1= strongly agreed to 5 = strongly disagreed, we investigated the DOI/TAM variables as shown in table 1.

Table 1: TAM/DOI variables in the study

Constructs	Variables
Perceived usefulness	Applying web technology tools in my job enables me to accomplish tasks more quickly
	Applying web technology tools improves my job performance
Perceived ease of use	Interacting with library clients using web technology tools is always easy
	Learning to use web technology tools to assist clients in my library is easy for me
	Using web technology tools to offer library remote training make a librarian's job easier
Relative advantage	The web technology tools I use to assist Unisa clients give me a relative advantage over my peers who do not want to use them
	Adopting web technology tools in Unisa library may improve the quality of my work
Compatibility	Using web technology tools is compatible with all aspects of my work
	Web technologies I use are consistent with my existing values and needs
Complexity	Web technology innovations are complex to use
	Using web technology tools for library clients is often frustrating
	Using web technology tools to support library clients need a lot of mental effort
Trilability	There are enough people in my organisation to help me try the various uses of web tools
	There are enough people in my organisation to help me try the various uses of web tools
Observability	I have seen what other librarians can achieve by using web technology tools in their libraries
	The benefits of using web technology tools are visible to remote library clients
	The benefits of using web technology tools are visible to remote library clients
	Using web technology tools has enhanced my status at Unisa library
Communication	I use communication tools (Skype, Scopia, Live broadcasts, etc) to train remote library clients
	I use Interpersonal communication tools (such as Skype, Scopia, Live broadcasts, etc.) to communicate with remote library clients

In an open-ended manner, the researchers asked the respondents to supply any comments about their experiences in the use web of technology tools questions. The researcher adapted questions used in Abdekhoda et al (2013), Khan and Woosley (2011), and Chuttur (2009) to understand acceptance and adoption behaviours of the respondents. The instrument was administered using Survey Monkey, because participants were located in various regions throughout South Africa and in one regional library in Ethiopia, Addis Ababa, and they are web-literate enough to complete the instruments.

The questionnaire was sent to the 135 librarians who had earlier consented to participate in the study, and five reminders were sent over a period of five months. However, only 68 of the 135 participants completed the instrument, a low rate of 50.3%. The reliability of the scales was tested using Cronbach-alpha coefficient to measure the internal consistency of the instrument. The reliability of the scales ranged from 0.83 to 0.86, a result that shows that the scales were good for further analysis.

Chi-square was used to interrogate relationship between demographic variables and technology variables. TAM/DOI variables were computed to reduce their dimensions, and then used correlation analysis to analyse the relationships between the acceptance variables and technology adoption variables as they are specified in the hypotheses. In an open-ended manner, respondents were asked to provide comments about their experiences using web technologies to support staff and students putting the ODeL nature of the university into mind. In order to amplify the voices of the respondents, we deliberately displayed the opinions of some of the respondents to support the quantitative results.

Findings

Demographic Characteristics of Respondents
Gender distribution of the respondents was consisted of 68.18% females and 31.82% males. The age distribution shows a higher constitution of respondents aged 50 years and above (50%). It shows 19.12% of the age range 30-39 and 29.41%. The range of 20-29 years was the lowest at 1.47%. No respondent in the study was below the age of 20 years. In terms of their working experience at Unisa library: 8.82% of the respondents have 0-5 years working experience at Unisa. Less than half of respondents (42.65%) have worked in the Unisa Library for 6-10 years, while 39.71% have been employed for more than 20 years. The number of staff in the categories of 11-15 and 16-19 years are the lowest, 2.94% and 5.88% respectively.

Web Technologies Use at Unisa Library

Technology Adopter Categories
From Table 2, 37.31% of staff at Unisa Library are innovators of web technologies. The early adopters' category constitutes 7.4%, while the early majority are 35.82%. The result further shows that 5.97% and 11.94% of the respondents are in the late majority category.

Only 1.49% of respondents were laggards. We found no relationship between gender ($\div2$=4.189, df=5, p=0.421), age ($\div2$=17.013, df=15, p=0.952) and number of years of experience ($\div2$=26.082, df=20, p=0.680) with the innovation categories.

Table 2: Web technology adopter categories at Unisa library

Questionnaire items	Adopter Categories	Frequency	Percentages
I usually want to be the first to try new web technology tools	Innovators	25	37.3
I always influence my colleagues to use web technology tools	Early adopters	5	7.4
I usually require some training by someone before using new web technology tools	Early majority	24	35.82
I usually need to see some evidence that web technology tools work before I use them	Late majority	8	11.94
I think the traditional way of working (without web technology tools) is still the best	Laggards	1	1.49
Missing records		*1*	6.05
TOTAL		68	100

Web Technology Tools Used in the Last Five Years

Table 3 shows that Facebook and Twitter were the most social media tools used, 66.18% and 41.18 %. In line with modern trends the way librarians support research, reference management tools (collaboration tools) such as Mendeley and RefWorks (58.82%) as well as ResearchGate (42.07%) were the most commonly used web tools. Web tools used for online training purposes like Podcasts (29.41%), Skype (30.88 %) and Scopia (39.71%) were also familiar with Unisa librarians. RSS feeds was also utilised by a high (54.14%) number respondents. Respondents also used social bookmarking tools. Diigo was used by 8.82% and Academia.edu was used by 25%.

Table 3: Types of web technology tools commonly adopted at Unisa library

Web technology	Frequency	Percentages
Facebook	45	66.18
Mendeley	40	58.82
RSS feeds	37	54.41
Research gate	29	42.65
Twitter	41	41.18
Scopia	27	39.71
ORCiD	24	35.29
Skype	21	30.88
Podcasts	20	29.41
Academia.edu	17	25.00
LibraryThing	8	11.76
Diigo	6	8.82
Join-me	2	2.94
WebEx	2	2.94
Other (please specify)	11	16.18

Note: Multiple response questions

The result of the open-ended responses shows 16.8 % of respondents specifying various web technologies such as Massive Open Online Courses (MOOCs) and Pinterest.

Challenges Encountered by Librarians when Using Web Technologies

In a yes-or-no manner, respondents were first asked whether they had encountered any challenges using web tools to assist online library users. Table 4 shows that as high as 76% of the respondents experienced various challenges when using web tools. The researcher listed challenges and asked respondents to indicate which ones applied to them. The result in Table 6 shows a high number of respondents (63.5%) reporting network issues and technical support respectively.

Table 4: Challenges encountered by librarians when using web technologies

Challenges of web technologies usage	Frequency	Percentages
Technical challenges	35	63.64
Network issues	35	63.64
Training requirements	30	54.55
Keeping up with new versions	21	38.18
Clients technology limitations	20	36.36
Security issues	19	34.55
Cost to implement	13	23.64
Complex to use	11	20.00
Privacy issues	8	14.55
Added stress for me	6	10.91
None of the above	2	3.64
Others (please specify)	8	14.55
Missing Records	*13*	*19.11*

Note: Multiple responses

A large number of respondents (54.55%) reported training need issues, while keeping up with new versions of web technologies is considered a challenge by 38.18% of respondents. Respondents also reported security issues (34.55%). The opinions in the open-ended section of the questionnaire shed more light:

"Colleagues' resistance to accept and adapt to new technology, as well as management's resistance to try out new technology."
"Poor library management support."
"Obtaining official approval to purchase licenses or to develop products in support of our information service - red tape. Slow and cumbersome tender process. Confusion of correct forms and procedure to follow, e.g. when submitting business specifications and requirements. Lack of clear written and accessible guidance from library/institution on procedural matters around technology."
"Lack of reliable and up to date information on clients' ownership of devices/level of access to the internet (e.g. continuous or reliant upon library/telecentres, etc.) to inform decision-making."

Factors That Influence the Adoption of Web Technologies in Libraries

Table 5 presents respondents' responses to a multi-response questions on factors that contribute to librarians using web technologies.

Table 5: Factors that influence librarians to adopt web technologies

Factors that influence the adoption of web technologies	Frequencies	Percentages
Personal interest	37	55.22
Enhancement of communication with library clients	36	52.94
ODeL strategic objectives	34	50.00
Clients' expectations	32	47.06
Ease of training of remote library clients when one adopts web technology tools	27	39.71
It enhances the credibility of the library profession	21	30.88
It enhances my librarianship career	21	30.88
Other (please specify)	6	8.82

Note: Multiple response questions

The responses show that personal interest (55.22%), enhancement of communication with clients on the online platforms (32.94%), university's strategic ODeL objectives (50%) and clients' expectations (47.06%), contributing to influencing librarians to adopt web technologies. The ease of training of remote library clients is also reported by 39.71% as contributing factors to usage of web tools, whilst 30.88% of respondents reported that usage of these tools enhances their librarianship career. The comments in the open-ended section are very informative:

"Influencers within the Unisa Library (there are always colleagues with a passion for all things new and useful and they often raise the interest of others in trying something new), benchmarking what we do against other local and international institutions offering similar services. Necessity - anything widely used by clients or fellow professionals Inevitably makes its way into the operations of the Library, even if we adopt more slowly owing to budget constraints, staff shortages, discontinuity on ICT projects as the contracts of business analysts and other ICT staff expire and a new person has to take over and orientate to the project. Fear of being left behind. The next technology on the horizon is no longer in the singular – we face many new information technologies sitting just over the horizon, and not for long!"

"Makes my technological awareness easy. As a person working with technologies, one needs to always be on par with new technological developments."

Individuals Who Influence the Use of Web Technologies in Libraries

The questionnaire examined the influence of other individuals on the decision of the librarians to adopt. Table 6 shows that library colleagues (53.73%) and library clients (47.76%) were the most influencing individuals in the adoption decisions of librarians.

Table 6: Influencers of Unisa librarians to adopt web technologies

Individuals who influence respondents to use web technologies	Frequencies	Percentages
Library Colleagues	36	53.73
Library clients	32	47.76
Library Management	15	22.39
ICT colleagues	11	16.42
My boss	10	14.93
Other (please specify)	3	4.48
Missing record	*1*	

Note: Multiple response questions

Library management and participants' line managers were reported as influencers by 22.39% and 16.42% respectively. Colleagues in ICT were reported as influencing by 16.42% of the respondents, whereas 4.48% indicated that other reasons than those listed influenced adoption of the web tools.

Experiences of Librarians Using Web Technology – Open Ended Comments

The respondents offered very useful opinions. Some of the items in the opinions of Respondent 07 are very lucid points:

"Ethical, legal and online security issues are very important and should be investigated and handled up front before new web technology tools are adopted, and factored into any training offered to staff and students, and into interaction with staff and students. Even knowledgeable users are vulnerable when online."

"Accessibility issues for users living with disabilities should also be taken into account when selecting web technologies."

"A full, permanent team of ICT staff would help, including more people who specialise in educational technologies and the needs of clients living with disabilities."

"Liaison with the database vendors to consider the librarian as intermediary in the design of their databases - they should be friendly to both the self-help end user and the intermediary. All web technology tools would benefit from the input of librarians at the design phase. EBSCOhost has one of the most friendly and effective retrieval interfaces and it is because they have professional librarians working on the development team."

A respondent expressed concern about the current capacity of the librarians to meet the challenges of ICT needs in the Fourth Industrial Revolution. "41R is approaching. Unisa is supposed to be ODeL (institution) with remote learners and even in towns - poor internet connection; poor access to internet, cost of software and hardware (can make use of telecenters); librarians and clients not all techno - savvy; cost of data. Librarians need training and state of the art PC's and time and a place (studio) to experiment and create e.g. podcasts or screen casts. Library must budget for training and tools; technology (ICT) support. Not all students are using myUNISA and mylife e-mail - must be motivated to use it, they are not aware of its importance for communication".

"Even though web technology tools are assistive for the work it is difficult to use more often by end users in our branches as most of them said they have a problem of connectivity (Respondent 45). Many respondents focussed on ICT issues: "It takes too long to implement web technologies at Unisa and we constantly try and play catch-up. The approval and procurement processes hinder the adoption of web technology and by the time we implement, there is already something new and more exciting than the technology we just acquired" (Respondent 62). Others mentioned restrictions, awareness about new technologies, procurement bottlenecks, network challenges, and difficulty in loading applications. Many mentioned support from ICT. "I battle to get quick support from both library ICT and Unisa ICT; it's the frustration with the ICT; Need user friendly sophisticated ICT; more training needed. These show that the librarians are sufficiently enlightened about their roles in respect of the web technologies, and that they are actually encountering challenges in their use of the web to deliver information service, and they also have ideas about the gaps in current information technology tools used in the library and possible solutions to the challenges.

Analysis of the DOI/TAM Variables

From Table 7, a mean value of 1.80 means that majority of the responses in respect of perceived usefulness fall into the category of 'agree'; perceived ease of use, relative advantage, compatibility, and trialability all fall into the same category.

Table 7: DOI/TAM variables

Variables	Mean	SD
Perceived usefulness	1.80	0.87
Perceived ease of use	2.18	0.94
Relative advantage	2.09	088
Compatibility	2.37	0.98
Complexity	2.78	0.95
Trialability	2.41	1.05
Observability	2.57	0.95
Communication	2.52	1.05

However, responses on complexity, observability and communication differ, as the mean values fall within 'undecided' category.

Testing the Hypotheses Using Correlation Analysis

Figure 1 is the Pearson product-moment correlation coefficients of TAM and DOI variables, showing the extent of the relationships amongst the specified variables in the hypotheses.

H1. The perceived usefulness of web technology tools by librarians at the UNISA library will positively lead to adoption of the tools for library services.

The results affirmed that web technology tools are useful positively influenced their adoption although the relationship (r=0.314, p< 0.001) is weak. Previous literature such as Abdekhoda, Denhad, Ahmadi and Noruzi (2016); Al-Suqri (2013); Buabeng-Andoh (2017); Afari (2010), among others, also reported similar findings.

H2. The perceived usefulness of the web tools by librarians at the UNISA library will significantly depend on the relative advantage the librarians expect to gain when using such the tools.

Figure 1 shows a strong and significant correlation between usefulness and relative advantage (r= 0.775, p<0.001). The hypothesis is therefore supported. Wu, Li and Lin (2010) made similar findings about relative advantage having a positive influence on the perception of usefulness.
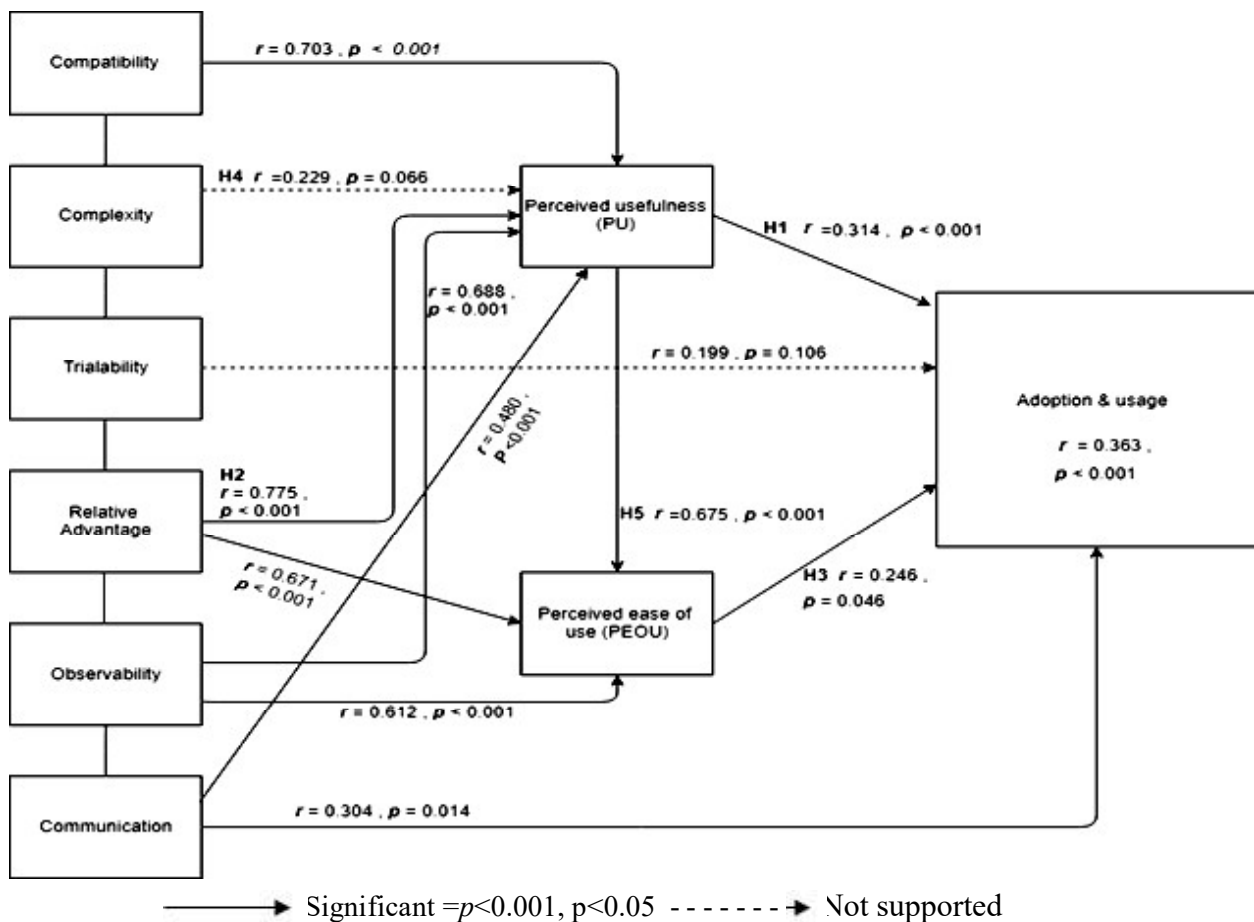

Figure 2: Conceptual research model with results (Adapted from Abdekhoda et al, 2016)

H3. The perceived ease of use of web tools by librarians at the UNISA library will significantly influence the acceptance and adoption.

Figure 2 shows a strong but low relationship of perceived ease of use with the adoption of web technologies ($r= 0.246$, $p=0.046$). This hypothesis is hereby supported. Thong, Wong and Tam (2002) as well as Abdekhoda, Ahmadi, Gohari and Noruzi (2015) revealed in their studies that perceived ease of use has an impact on the decision to adopt.

H4. The perceived complexity of library web technology tools by librarians at the UNISA library will have a significant influence on the perceived usefulness of the tools.

Figure 2 shows a weaker and not significant correlation between complexity and perceived usefulness ($r=0229$, $p=0.066$). Respondents in this study did not associate complexity of web technology tools with the usefulness and lack thereof. The hypothesis is therefore not supported. The studies of Lee, Hsien and Hsu (2011); Ramavhona and Mokwena (2016) also found no relationship between complexity and usefulness.

H5. The perceived usefulness of library web technologies by Unisa librarians will significantly depend on the ease of use of the tools.

Figure 2 shows a strong and significant relationship between ease of use and perceived usefulness of web technologies ($r=0.675$, $p<0.001$). Unisa librarians find web technologies useful as long as the tools are also easy to use. This finding conforms to those of Stoel and Lee 2013, Lee, Kozar and Larse 2003, and Mensah 2016.

Discussion of Findings

This study examined the adoption, use and acceptance of web technologies innovations by librarians in Open Distance e-Learning at the University of South Africa to support geographically dispersed researchers and students. Data was collected from 68 librarians using a questionnaire that also has open-ended comment sections. More females responded to our invitation to participate in the study, and more females also completed the questionnaire. There is evidence however that there are more females in library practice than males (Mbambo-Thathu 2019). In respect of completing research tools, Smith (2015) has shown in his study, however, that in respect of online survey a significantly larger percentage of female faculty members returned surveys than did their male counterparts. This observation couples with the general low response obtained in respect of completing the instrument to highlight the problem of low response in online surveys. With more than 50% of the participants being people over 50 years old, chances abound that the leaders of the library are people who may not be as technology savvy as their subordinates.

Studies that show that young people are more prone to embracing and using information technologies than older people are ubiquitous (Morris and Venkatesh 2000, Niehaves and Plattfaut 2014). Over 50% of the librarians were aged 50 and above, whiles many as 39.71% have spent more than 20 years at Unisa library, although there has been a change since the past 6-10 years when a large number of library workers have been employed. Librarians who trained 20 years ago would have less of information technology as components of their library education than those who trained in the recent 10 years or less.

Based on their self-rating, majority of the respondents are innovators. Innovators occupy the highest level of technology adopters in Rogers's hierarchy (Rogers 2003). A large number of innovators among the librarians means that there is higher opportunity for deploying IT, and also addressing the ICT challenges when they occur (Lwoga 2008). A higher number of innovators may indicate the potential of readiness to adopt web technologies by librarians. Of significant interest is the finding that there is no significant relationship between age, gender, and, number of years of service with innovation category (Holland 1997). This prospect notwithstanding, the proportion of early adopters, that is, those that can influence others to adopt technology for library services purposes, is very low (7.4%) compared with the relative high number that requires training to do the same (35.82%). The librarians have used a wide range of web tools in the last five years although Facebook (FB), a social media tool and Mendeley, a reference/citation tools are the

most used. We do not know the specific library services offered through the technologies, although FB can be used to invite library clients for training or to announce training and other programmes (Kennedy and Shields 2012).

Despite more than one-third of the respondents reporting to be innovators and early majority respectively, many of the respondents reported that their online clients and end users in branch libraries might either not have adequate access to the technologies used by the main library, or might not have the required capacity to benefit from the online library services. The librarians recognised the differences in levels of technology adoption in different locations of their clients; it can be alluded therefore that the web technology skills of the librarians at Unisa might not be as much a challenge to effective library services, but rather the state of web technology skill adoption and acceptance in the locations of the clients. Maul, Saldivar and Sumner (2011) had earlier observed that librarians were fast coping with emerging technologies in the library. In several studies, researchers have examined and upheld the fast rate at which people embrace and accept technologies that enable them provide services to their clients (Brandtz 2010; Danielson and McGreal 2000; Davis 1989; Deffuant, Huet and Amblard 2005).

Technical support and network issues top the challenges the librarians encountered. Technical support means that there is interaction between clients, librarians and technology with the aim of assisting clients and librarians' everyday practices and services (Grönroos 2008). Technical services are important because of the rapid rate at which new technologies are emerging to address issues in more modern ways, and librarians and clients need to be in seamless touch. Technical support activities include complex interactions and relationships through which the librarians and clients get maximum benefits of the technology tools, and optimize the usage of products and business risks that are related to the utilization of the technology tools. Technical support should be informative and educational, and should be an element of the integrated library service design. Most of the challenges reported by the respondents are tied to the subject of technical support.

From the perspective of librarians, technical support involves offering support to librarians and library clients accessing library electronic resources. Such support may include off-campus access settings, browser and connection problems, article download errors, library pin settings amongst others (Unisa Library Technology Libguide, 2019). Cunningham; Knowles and Reeves (2001) further expatiated technical support when they investigated the potential software and/or hardware problems in the library setting, and locate the solutions to problems before they occur. Gajic and Boolaky (2015) have examined how technical support aid performance in a manufacturing industry. They showed that technical services address relationship quality, knowledge required for providing help in getting maximum product benefits, sharing of knowledge, and a range of product and service offerings that satisfy customer needs. In the case of online library services, there is a need to examine the meaning and ways of efficiently deploying technical support to ensure that online learners and librarians are seamlessly linked.

The participants' comments on the challenges to effective web technology tools deployment are very critical, and they relate to issues that would require further investigation. For example, the issue of colleagues' resistance to accept and adapt to new technology and management's resistance to try out new technology may be pointing to administrative and leadership issues. Given the evolving nature of web technologies in the library, building technical capacity should embrace all levels of the library management so as to ameliorate management and leadership bottlenecks that impinge operational performance. A further example has to do with the reference to obtaining official approval to purchase licenses or to develop products in support of the information service. Tall bureaucratic processes, poor commitment to task, low level of knowledge about details and urgencies involved in the tasks performed by the librarians which were mentioned by the respondents could account for this observation. As far back as 1978, Beverly Lynch had described the library itself as a bureaucracy.

Slow and cumbersome tender/procurement process and confusion of correct forms and procedure to follow when submitting business specifications and requirements, for instance, are evidence of tall bureaucracy. Welch and Pandey

(2007) explored issues of bureaucracy as impediment and red tape to implementation and procurement of intranet services in e-government scenario. The question of lack of clear written and accessible guidance from library/institution on procedural matters around technology requires that the library pays attention to library communication. The library's focus should be research based, such that issues about the technical support and needs in the environments of dispersed students can guide how students' needs are addressed.

The library staff are interested in deploying web technologies in their services, but enhanced communication with colleagues, knowing the strategic objectives of the institutional library and clients' expectations join to motivate the librarians. Communication with colleagues, the need to meet the expectations, consciousness of the reality and rapidity of new technologies spur the librarians to duty. Library colleagues being a source of influence on adoption of web technologies continued to reoccur in the comments made by the librarians. Most incidentally ICT colleagues who are expected to be the providers of the technical support are sources of influence to a few numbers of people. Evidently ICT colleagues may not be librarians and communication between them and the librarians may be fraught with differences in language. Librarians who have technical knowledge of the issues involved in using the technologies to provide library services will be better sources of knowledge to their colleagues. The Unisa Library has an ICT Section which also assists in bridging the technical barrier between the librarians, library clients and other ICT staff. Improved communication will be required to reduce the gap between librarians and ICT staff in relation to library services.

The librarians agreed with perceived usefulness, perceived ease of use, relative advantage, compatibility, and trialability of web technologies as enablers. But they were undecided with respect to the technologies being considered complex, and whether they require to observe use of the technologies before embracing them. Most unexpectedly, the librarians were also undecided with regards to the role of communication, despite the librarians having strongly reported that colleagues are very crucial in their use of the new technologies. Ethical, legal and online security issues are very important and should be investigated and handled up front before new web technology tools are adopted, and factored into any training offered to staff and students, and into interaction with staff and students. Even knowledgeable users are vulnerable because cyber security issues have become a complex and sophisticated issue. Buchanan, Paine and Reips (2007) interrogated the issues of privacy for end-users on the online environment and emphasised the importance of looking at issues such as the guarantees of confidentiality if virtual learning environments allow student behaviour to be tracked and the ethical implications thereof. The relationship between this observation and the job of a librarian is so apt. A librarian dealing with a student online might equally be dealing with a criminal who is collecting information for an unwholesome purpose.

The question of users living with disabilities has been an issue of global concern for some time, inviting a more serious attention to inclusionism. Unisa has a provision and dedicated staff for catering for clients with physical disability. Several assistive technologies such as Blaze EZ, Booksense Victor reader Stratus and others are available for use by these specialised group in order to enhance their access to library resources (Unisa Library Libguide on Disability services, 2019). By suggesting establishing a web technology laboratory where products could be designed to meet own ODeL library needs, the Unisa librarians seem to be asking for a re-tooling of the ICT paraphernalia of the library. The librarians are suggesting that library information technology planning and implementation should be inclusive, involving librarians at all stages and locations, and not just bringing in the librarians at the stage of training and use. The university authority should … *keep in mind that perpetual change is fatiguing (even boring) and to investigate ways to support staff to enjoy the ride, and to truly take their advice and input on board. Front line staff are a fount of knowledge when it comes to evaluating the problems of a technology in practice.*

Conclusions

Despite being mainly innovators and early majority in library web technology adoption, the librarians still reported an overwhelming need for technical support.

References to technical support in this study mainly referred to ICT staff and their responsibilities. This observation raises questions regarding the type of ICT training offered to the librarians. Beside technical support that is offered by ICT staff, there exists a library function known as 'library technical services'. These are librarians themselves but they have adequate technical training in the area of library information technologies. One implication of the findings in this study is that the factors affecting performance of the librarians are not located within the conventional TAM and DOI models. The librarians appear to be comfortable with the basic issues as suggested by the outcome of the model; but there are locale-sensitive issues that impinge on their performance such as ethical issues, training needs, administrative bottlenecks, among others. The issue of ICT laboratory to test ICT tools before they are implemented resonates in the cultural question – science and technology are cultural sprouts. Addressing this big observation requires a very fundamental discussion; but a first step may be to identify what is un-African about the tools, and what could be done to localise them.

Implications for Practice and Research

Unisa needs to continuously inform, enlighten and educate its clients whenever they implement new web technologies, and mount online tutorials to ensure that clients also cope with the changes. A feedback mechanism that is integrated with the learning systems needs to be installed to ensure that clients study the new technologies. Research is required to investigate some of the impediments that clients encounter when accessing the web technologies. Also, administrative functions need to be re-engineered to reduce the challenges of *red tape* observed by a respondent. Documents on procedures for procurement and others need to be reviewed to reduce provision that obstruct technology and technology service procurement processes. Furthermore, Unisa needs to birth increase and strengthen library technical services as a veritable strategy to address the distance between ICT

technical service providers and the librarians.

Attention needs to be directed towards how to harmonise web technology implementation in the various branches of Unisa Library with capacity and technology of distance and online clients. While this is a difficult task, an initial strategy might be to undertake periodic investigation of the levels of technology acceptance and adoption in online and distance students and learner locations. This study also unveils a very crucial element in web technology implementation in Unisa, namely the role of non-technology functions and activities. For example, a respondent said: *The approval and procurement processes hinder the adoption of web technology and by the time we implement, there is already something new and more exciting than the technology we just acquired.* Technology capacity is not a domain of the technology users only; those who play administrative roles, for instance, a*pprovals,* also require some understanding of new developments and their essence and should also be made conscious of the urgency of their decisions in view of the short life span of web technologies. Ever increasing role and significance of information technology means that Unisa Library will also continue to acquire more technologies.

How do the ICT librarians more fruitfully integrate Facebook into the roles of other web technologies in view of its dominance compared with other technologies? This question deserves attention by practitioners and those ICT experts who understand the critical role of ICT in the library. Added to this observation, how does the library improve use of other technologies by librarians, besides social networking and citation management tools? While technical support may be a common cliché in respect of library ICT in Unisa Library, there is need to practically examine the meaning and nature of library technical support in the library, and the extent of performance of existing library technical support services based on the opinions and experiences of Unisa librarians in this study.

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Towards a Framework to Optimise Social Media Usage in Academic Libraries in Ghana: An Empirical Study

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Abstract

This paper sought to propose a framework that may help academic libraries in Ghana to optimise the use of social media in their endeavour to provide library services as well as access to library resources. Using the unified theory of acceptance and use of technology (UTAUT) as its theoretical lens, this study employed a cross-sectional survey whereby quantitative data was collected from a total of six-hundred and five respondents through the use of a questionnaire. Statistical analyses were carried out using the statistical package for social sciences (SPSS) and the structural equation model (SEM) analysis to analyse data. The study sought for the following data, which informed the development and constituted the components of the framework: types and extent of social media commonly used in the libraries, UTAUT variables and respondents' demographics that significantly influence adoption and use of social media; and strategies and policies that necessitate the successful adoption and usage of social media. The framework offers a deep understanding regarding the aforementioned aspects as well as provides a basis for further research on the utilisation of social media in academic libraries in not only Ghana but worldwide.

Keywords: *Social Media, Academic Libraries, UTAUT, SEM Analysis, Ghana.*

Introduction

The socio-economic development, right from the age of industrialisation to what is currently termed as the knowledge age, has been accompanied with new technological innovations in the information environment. In this environment, it has become imperative for academic libraries to integrate interactive online media systems into mainstream library and information services. One of such innovations is the social media platforms and technologies. Indeed, the adoption and use of social media are becoming so prevalent that they have remarkably altered and dominated the daily personal and professional lives of human beings in today's globalised world (Patra 2020). This revolution and popularity have affected the operations and activities of service providers such as academic libraries and is gradually becoming an indispensable tool in the work of the library professional.

The proliferation of social media applications in academic libraries is not unexpected, particularly in this era where academic libraries' clients are increasingly techno-survey. Furthermore, libraries need to adopt and increasingly engage on varied social media platforms so as to move beyond the traditional bounds of the library, connect with its users and to keep abreast with new trends. Consequently, the importance of studying the adoption and use of social media in academic libraries in Ghana stems from the demand for the provision of timely information in today's increasingly competitive and global technological world, to have competitive advantage over other information providers, and to attract patrons.

Undeniably, the crucial goal of an academic library is to ensure that library resources are made accessible to patrons and that there is optimal use of the information resources hosted by the library. Social

media has come in handy to support the library efforts in providing services and information resources to clients. Undoubtedly, social media continue to empower academic libraries to connect with, and engage its different stakeholders in an ever-present method of information services delivery. It is, however, not enough for academic libraries to merely have a presence on social media, for instance, by having a Facebook page or a Twitter account (Kiron *et al* 2012). To use social media successfully, academic libraries must have a strategy to consider which social media platforms to adopt and use, the purpose for which social media are used and how they can support organisational objectives. Moreover, with the number of social media platforms available, it is essential for academic libraries to resolve on how best to commit their time and resources to social media (Winn *et al* 2017). In this regard, academic libraries need to appreciate and understand how the varied social media platforms adopted can be successful, sustainable, and engaging for both the staff and the patrons.

Contextual Setting

This study was conducted in Ghana, a nation in the sub region of West Africa.. This study was focused on libraries within the tertiary educational institutions, designated as academic libraries (ALs). These constitute libraries of universities and polytechnics. These libraries support the institution's curriculum as well as faculty and students' research. There are three (3) main categories of academic library systems in Ghana. These are: libraries of accredited public universities, private universities, and technical universities (formerly known as polytechnics). These libraries are regulated by management of the universities, and managed by the heads of the library (usually referred to as the 'University Librarian' in the case of the private and public universities and simply 'Librarian' in the technical universities), and their deputies as well as a group of library staff designated as 'senior members'. The management structure of each library is however dependent on the size, statute, and policy of the library. Currently, Ghana has 93 academic libraries consisting of ten public ALs, 75 private ALs with eight technical universities spread across its ten regions. For this study, libraries from each of the three categories identified were included as part of the study

population.

Problem Statement and Purpose of the Study

In Ghana, given that quite a number of studies have been conducted on the use of social media in academic libraries (e.g. Agyekum and Trivedi 2016; Ahenkorah- Marfo and Akussah 2017), very little is known about service offerings derived from such applications and its effectiveness. Furthermore, the aforementioned studies have identified several challenges faced in the use of social media in the libraries and as a result, there is need to provide a viable solution in the form of a framework to facilitate optimal use of the social media platforms in the academic. Consequently, we conducted a study to broadly investigate the use of social media in academic libraries in Ghana, with a view to developing a framework to optimise the use of such platforms in academic libraries in the country. In order to actualise the framework, the study sought to:

- Examine the extent to which various types of social media platforms are used in academic libraries in Ghana.

- Determine the influence of, performance expectancy, effort expectancy, social influence, and facilitating conditions on the behavioural intention and use behaviour of social media in academic libraries in Ghana.

- Assess the moderating influence of age, gender and experience on factors influencing the intention to use and actual use of social media in academic libraries in Ghana.

- Analyse the strategies regarding the use of social media in academic libraries in Ghana.

Theoretical Lens for the Study

This study is informed by the unified theory of acceptance and use of technology (UTAUT). The UTAUT is one of the most advanced models of technology adoption and use in the organisational context (Yuvaraj 2016). The UTAUT model theorises that the intention to use and behavioural use of technology is dependent on four key factors, namely performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh *et*

al 2003) [see Figure 1]. According to the UTAUT, performance expectancy, social influence, and effort expectancy influence the behavioural intention (BI) to use an information system whilst facilitating conditions and behavioural intention to use influence the use behaviour of an information system or technology or an innovation.

Figure 1 further demonstrates that the UTAUT model considered four variables that have a moderating effect on the above-mentioned variables that influence the use of technology. The UTAUT assumes that the path from all four key predicting constructs to the outcome variables are moderated by personal characteristics that comprise age, gender, experience, and voluntariness of use. These moderators, Jaradat and Ateh (2017) admitted, permit inferences and explanations on behavioural intention, and have been noted to play an important role as control variables, especially for investigating and understanding their relationships with factors influencing the intention to use technology. Accordingly, apart from identifying and discussing the key factors that may affect the intention to use and actual use of social media, this study observed the effect of these moderating variables on the relationships proposed in the hypothesised original research model.
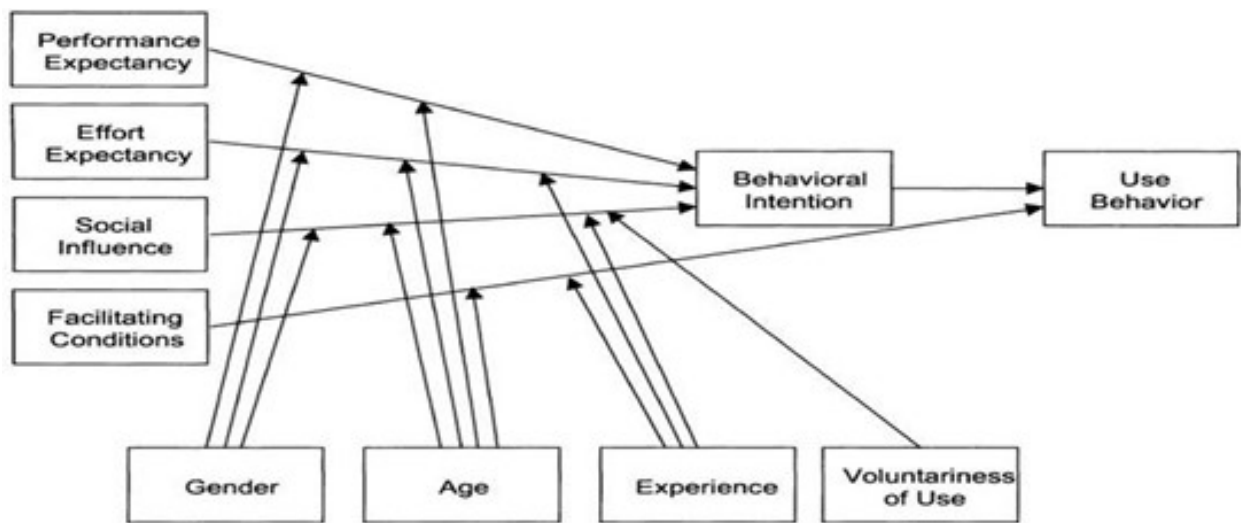
Figure 1: Original UTAUT model (Source: Venkatesh et al 2003).

The model in Figure 1 was adapted and developed a framework (see Figure 2) that guided the conduct of the current study. The decision was informed by the fact that UTAUT is widely acknowledged as an appropriate theoretical lens to study the adoption and use of technology (or a technological innovation). All constructs except voluntariness of use were adopted to guide the study. Voluntariness was excluded as the use of social media is neither voluntary nor compulsory in academic libraries in Ghana. The UTAUT was specifically used to not only identify the factors but also the extent to which each variable influenced the adoption and use of social media in the academic libraries in Ghana. Using UTAUT, the following hypotheses were formulated to examine the relationships between the independent variables (factors influencing adoption and use of social media) and dependent variables (intention to use and behavioural use of social media).

H1: Performance expectancy has a significant relationship with the behavioural intention to use social media in academic libraries in Ghana.

H2: Effort expectancy has a significant relationship with the behavioural intention to use social media in academic libraries in Ghana.

H3: Social influence has a significant relationship with the behavioural intention to use social media in academic libraries in Ghana.

H4: Facilitating conditions have a significant relationship with behavioural intention to use social media in academic libraries in Ghana.

H5: Facilitating conditions have a significant relationship with use behaviour of social media in ALs in Ghana.

H6: Behavioural intention has a significant relationship with the use behaviour of social media in academic libraries in Ghana.

H7: The path from performance expectancy, effort expectancy, social influence and facilitating conditions on behavioural intention

is moderated by gender, such that the influence is stronger for females than for males.

H8: The path from performance expectancy, effort expectancy, social influence and facilitating conditions on behavioural intention is moderated by age, such that the influence is stronger for older people than for younger people.

H9: The path from performance expectancy, effort expectancy, social influence and facilitating conditions on behavioural intention is moderated by experience, such that the influence is stronger for persons with increased experience.
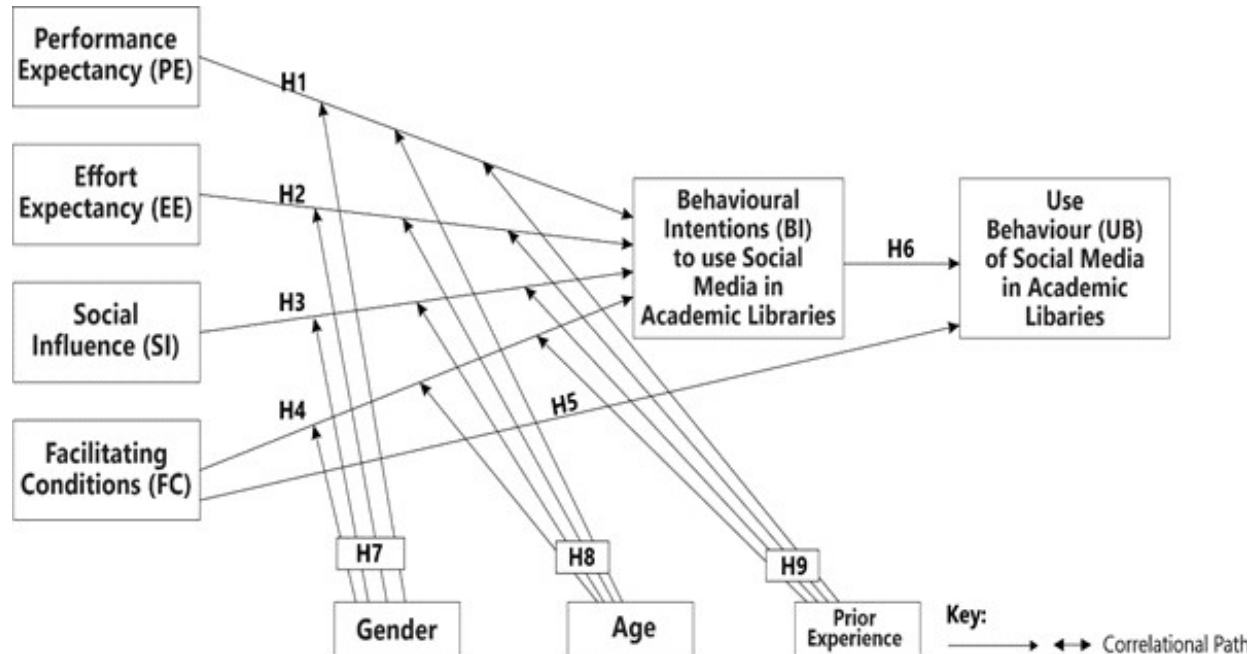
**Figure 2: Proposed theoretical framework for the current study
(Adapted from Venkatesh *et al* 2003).**

Literature Review

Admitting that some initial hesitations existed, the use of social media in academic libraries is no longer a novelty. Today, it is almost unimaginable to find an academic library without a social media presence (Deodato 2018). Almost all academic libraries especially in the developed world have readily adopted different social media platforms into their

day-to-day information services, and have at least one social media platform to keep patrons informed and updated on library services (Hamad, Tbaishat and Al-fadel 2017). In their literature review paper, Magoi, Aspura and Abrizah (2019) affirmed the relevance of social media as powerful tools for academic libraries especially from the developing countries. Magoi, Aspura and Abrizah (2019)

however presented challenges relative to lack of awareness of adopted social media applications by patrons, lack of relevant skills or manpower, and inadequate technical infrastructure as hindrances to the effective and efficient utilisation of such platforms in the academic libraries.

In Hong Kong, Fong, Au, Lam and Chu (2020) confirmed the use of social media in academic libraries and announced that even though the academic libraries are yet to fully utilise existing social media applications to optimise the academic libraries services to its patrons, Facebook, YouTube and Twitter came out as the most preferred platforms in the libraries. Likewise, Fasae (2020) from Nigeria revealed that although social media presence is no longer foreign to the libraries in Ekiti and Ondo states, the use of such platforms for promoting library services to its patrons was rare. Fasae (2020) as part of their recommendations proposed the development of training programmes for library staff to acquire the requisite skills needed for using social media as a library communication tool as well as the appointment of a dedicated library staff to manage the libraries adopted social media platforms that meet the library's core mandate. In Malawi, Chaputula, Abdullah and Mwale (2020) equally confirmed the use of social media in Malawian academic libraries, but equally reported on a number of technical, human and service related factors that posed challenges to the delivery of library services using such platforms.

Furthermore, prior literature has confirmed and/or disproved the significant correlations between performance expectance (PE), effort expectance (EE), social influence (SI), facilitation conditions (FC) and the intention to use, and the actual use of social media (Calderón, López, & Peña 2017; Hoffman, Suphan & Meckel 2016; El Ouirdi, El Ouirdi & Pais 2016). For instance, El Ouirdi, El Ouirdi & Pais (2016) surveyed 244 recruiters from Central and Eastern Europe and found PE, EE, FC and SI to have a significant influence on the behavioural intention (BI) and use behaviour (UB) of social media in employee selection. Equally, in the political context, Hoffman, Suphan and Meckel (2016) applied the UTAUT to analyse the impact of use motives on politicians' social media adoption in Switzerland. With the structural Equation Model as a data analysis tool, the study confirmed performance

expectancy and behavioural intention as significant influencers of social media use intention and usage behaviour among the politicians. Similarly, in their survey of 502 students from Colombia, Calderón, López, and Peña, (2017) discovered a high adoption rate (68%) of social media applications such as Facebook, Google+, Instagram, and Twitter, and reported that performance expectancy is a relevant predictor of social media use.

Besides, research demonstrates that the use and gratification of technology differ relatively to user characteristics, such as age, gender, and experience (Khan *et al* 2017). Indeed, literature has considered gender (e.g. Lin and Yeh 2019), age (e.g. Hwang, Lee and Kim 2019), and experience (e.g. Suki and Suki 2019) as the most commonly tested antecedents as moderators of factors influencing the behavioural intention to adopt and use a given technology, and have produced mixed results. However, there seems to be paucity of literature on their relationships with regards to social media use in academic libraries. That notwithstanding, as part of their study, Esteve del Valle *et al* (2017) employed the moderators of the UTAUT to analyse 333 university level instructors' use of social media in the assessment of factors contributing to the use of social media for teaching and highlighted the effect of age and gender as moderating variables on the factors predicting usage intentions and use. The study however presented an interesting outcome that is in contrast with the projected trend for age, where younger individuals are regarded as being more involved with social media use, since age recorded a greater number of social media use by older teachers.

On the contrary, the results from the validation of the hypothesised relationships between the key constructs and moderators of the UTAUT demonstrated no significant relationships between age, gender and experience on the path from performance expectancy, effort expectancy, and social influence to behavioural intentions, and from facilitating conditions to use behaviour of academic social networking sites by academic researchers in Malaysia (Salahshour Rad *et al* 2019). Similarly, gender was reported to have no significant effect on the relationship between PE, EE, SI and FC on the intention to use and actual use of mobile payment services, although age was presented to have positive impact on the relationship between EE, SI and the

behavioural intentions where the relationships were stronger for younger users (Sobti 2019).

Certainly, the use of social media continues to be a vital tool for academic libraries to connect with and engage its different stakeholders. However, to use social media successfully and efficiently, academic libraries should go beyond having a presence on social media, to developing strategies on why these tools are adopted, how they can be sustained to support organisational objectives (Winn et al 2017). Consequently, academic libraries must formulate comprehensive social media strategies to drive patrons' engagement with the libraries on such platforms. Such strategy includes the development of comprehensive social media policies, planning the use of social media, and human resources with the requisite skills and knowledge in social media, user engagement in the choice of social media platforms, continuous update of social media sites, and encouragement of user feedback (Schaffer 2013).

Methods and Materials

The quantitative research approach was adopted to conduct this study, wherein a survey was considered as an appropriate research design to collect data from four academic libraries comprising of two private universities, one public university and one technical university, as the data collection sites. The study population comprised a total of thirty-one thousand, one hundred and fifty-seven (31,157) comprising of library staff (110), students (30,006) and teaching staff (1,041) of the four universities. Due to the population of the library staff, the census approach was used wherein all participants in this category were regarded as the sample. For the population regarding students and teaching staff the sample determination table (Krejcie and Morgan 1970) approach was used to select sample sizes from each group. *(See appendix 1).* Thus, the sample size for the study was 767 comprising of 110 library staff, 379 students and 278 teaching staff.

Copies of the questionnaire designed for this study were administered to all groups in the sample. It was used as the main data collection tool and it was pre-tested prior to the data collection process, to assess validity and reliability. Statistical analyses were carried out using the statistical package for social sciences (SPSS) and the structural equation modelling (SEM) technique. The SEM analysis was used to analyse and test the path-significance of the hypothesised relationships of the key constructs and the overall explanatory power of the research model. The use of the SEM is predominantly acceptable in social science research due to its capacity to explain relationships between dependent and independent variables (Khan et al 2021), and has been used to estimate the relationships and correlations between theoretical constructs from the UTAUT to understand behavioural intentions and use behaviour (e.g. Adanýr and Muhametjanova 2021; Abbasi 2021).Additionally, t-test analysis was performed to test the hypotheses regarding the moderating effect of age, gender and experience in the proposed research model. To adhere to research ethical principles, letters seeking permission to conduct the study were sent to all the study sites. Thereafter, authorisation letters were obtained from the management of the academic libraries studied before the collection of data from the research respondents. The study results have been anonymised to conceal respondents' identity as a way of adhering to ethical practices stipulated by the research sites.

Summary of Results

This section provides a summary of the main findings, which led to the development of the proposed framework for the optimisation of social media use in academic libraries in Ghana. The constructs that were deemed necessary for the development of the framework were duly captured in the objectives of the study and included:

- Extent of social media usage in academic libraries (types of social media, and user awareness)

- Factors influencing the adoption and use of social media (i.e. the factors and the extent of their influence)

- Moderating influence of age, gender and experience

- Social media strategies (including policy, planning and staffing)

Of the 767 copies of the questionnaire distributed, 710 were returned. A total of 105 (14.8%) were not completed fully and therefore considered as invalid

to be used for analysis. As such, the copies of questionnaire returned in their complete and usable forms for analysis were six hundred and five (605),

giving response rate of 78.8%. A breakdown of the respondents presented in Table 1.

Table 1: Distribution of Respondents according to Institutional Affiliation

Institutional Affiliation	Respondent Category			
	Library Staff	Library Patrons		
		Teaching	Students	Total
Public University	68	95	211	374
Technical University	9	58	56	123
Private Universities	17	35	56	108
Total		188	323	
	94	511		605

Participants' Demographics

The library staff included 3 (3.3%) university librarians 11 (11.7%) assistant librarians, 51 (54.3%) senior library assistants, 23 (24.5%) library assistants, and 6 library ICT officers. Teaching staff comprised 55 (29.3%) senior lecturers, 44 (23.4%) assistant lecturers, 20 (10.6%) professors, and 14 (7.4%) associate professors. One hundred, eighty eight (i.e. 188, 58.2%) of the students were in their third year (level 300), and 135 (41.8%) in their fourth-year level of study. A mean value (x) of 2.68, and a standard deviation (sd) value of 1.82, computed from the frequencies obtained, revealed that 94.6% (572) of the respondents surveyed (have used social media as a personal tool at least between 1 year and 2-5 years, indicating an appreciable level of awareness of such platforms.

Extent of Adoption and Use of Social Media in Ghanaian Academic Libraries

The first objective of this study was to assess the extent to which various types of social media platforms are used in academic libraries in Ghana, in terms of their presence and services provided on social media, social media use frequencies in the academic libraries, the purposes for which social media are used, information content provided on the academic libraries' social media platforms and patrons' level of interest and likeliness to follow the

academic libraries on social media. Firstly on the social media platforms used to provide and access library services, findings show that, in order of importance, the academic libraries have adopted and are using a Facebook, Instant Messaging, Twitter, LinkedIn, and YouTube for the provision of and access to library services and resources as well as for contacting the libraries. Flickr, RSS feeds, Pinterest, Snap Chat, and wikis were however identified to be almost not used in the academic libraries surveyed.

Further, to determine the extent to which the academic libraries have embraced and applied these tools, the respondents were asked to indicate how frequently they used social media in their respective libraries with the use of a Likert scale ranging from 0-5, where 0= 'never use', 1= 'less than once per month', 2= 'at least once monthly', 3= 'at least once weekly', 4= at least once daily' and 5= 'multiple times daily'. The mean value obtained (x =1.46, sd=0.682) gives an indication that majority of the respondents scarcely use the social media platforms adopted by their university libraries' for providing and accessing library services as well as for contacting the library. Instant messaging (x =1.57, sd=1.352), Facebook (x =0.91, sd=1.859), and YouTube (x =0.70, sd=1.783) however came out as the most frequently used social media tools in the academic libraries for providing and accessing library services.

In addition, to determine the purposes for which social media tools were used in the academic libraries' surveyed, respondents were provided with some expressions relating to academic libraries services to select from. Findings indicate that whilst the library staff predominantly adopted social media platforms for publishing library news and events 93 (98.9%), marketing library services 70 (74.5%), facilitating information sharing 69 (73.4%) and promotion of library services' 67 (71.3%), the library patrons used such platforms for the purposes of getting information about latest books and articles in their field of study 236 (46.2%), get help on how to use the library173 (33.9%), and 'to remain updated about what is trending in the library 173 (33.9%).

Besides, to ascertain what content the academic libraries provide on available social media platforms, as well as their patrons' level of interest in the content provided, library staff were invited to indicate the type of information provided, whilst library patrons were requested to indicate what kind of information they were interested in seeing on their university libraries' social media platform(s). Findings here show that information content provided on the academic libraries social media platforms, and which were of key interest to the library patrons included content relating to library logistics (x =4.15, sd=0.455), research techniques and tips (x =4.15, sd=0.495), how to use library resources and services (x =4.26, sd=0.43), library collections and resources information(x =4.19, sd=0.46), and library services updates(x =4.0, sd=1.45). Lastly, to ascertain social media platforms most preferred for accessing and contacting the university libraries, the patrons were requested to indicate how likely they were to follow their libraries on social media, and on which platforms they were most likely to do so, using a five point Likert Scale ranging from 1 to 5 where 1= 'extremely unlikely', 2= 'somewhat likely', 3= 'neither likely nor unlikely', 4= 'somewhat likely' and to 5= 'extremely likely'. Findings indicate that the patrons of the academic libraries were somewhat or extremely likely (x =4.835, sd=0.0028) to follow their libraries especially on Facebook (x =4.05, sd=0.965) and YouTube (x =3.76, sd=1.016).

Factors Influencing the Adoption and Use of Social Media

To answer the second objective of the study that sought to determine the influence of performance expectancy, effort expectancy, social influence, and facilitating conditions on the behavioural intention and use behaviour of social media in the academic libraries surveyed, statements adapted from Venkatesh et al (2003) were used. These statements were self-rated on a five point Likert scale ranging from '1' to '5' where '1=strongly disagree', '2=moderately disagree', '3=moderately agree', '4= agree' and to '5=strongly agree'. This section presents the descriptive statistics of results from data obtained and analysed. For the descriptive analysis, the 'mean values' (M), are used to determine respondents' level of agreement or disagreement with a particular statement on each concept. Thus, a score of '1' indicates that respondents 'strongly disagree' with a statement used to measure a particular concept, whilst a score of '5' demonstrates that respondents 'strongly agree'.

On performance expectancy, all statements used recorded x-values above '4' an indication that a large number of the academic libraries surveyed either 'agree' and/or 'strongly agree' that the use of social media in their daily transactions will help the provision and delivery of library services and resources, as well as contacting the library. Similarly, a breakdown of the responses on effort expectancy show that most respondents will use the library social media when it is: easy to operate (x =4.33, sd=0.996), easy to use (x =4.23, sd=1.093), and understandable (x =4.21, sd=1.095).

However, the analysis of the responses used to measure the degree to which the academic libraries surveyed intend to use the library social media as a result of social influence, shows that academic libraries will not use social media for library services due to influences from their peers. The mean values recorded for all statements ranged between 2.41-2.51 an indication of the respondents' level of disagreement (moderately disagree) with the items on the scale. This indicates that the success to provide library services as well as access to library resources using social media does not lie in the power to convince the academic libraries on the efficiency of such tools for such purposes. So, library staff and

library patrons of academic libraries in Ghana are not more likely to adopt or intend to think positive about the use of social media in the libraries just because persons in their social circle suggested the use of such platforms. This finding could however be attributed to the characteristics of the study respondents, as they had prior knowledge on, and were using social media for personal purposes.

Additionally, the mean values (x) recorded for all statements used to measure facilitating conditions were below '3'. This finding shows that the academic libraries would largely not use the library social media platforms when they feel that the required resources and support to do so are not available and, or inaccessible. Further, the analysis of statements used to measure the respondents' behavioural intention to use social media for library services shows that even though the academic libraries desire (x4.39) and anticipate (x=4.46) to use the library social media platforms, their expectation in terms of intention to use the library social media was low 2.43 indicating that the respondents 'moderately disagree' with the intention of planning to use the library social media. Lastly, the findings from statements used to measure the academic libraries actual frequencies of social media use in academic libraries show that whilst, the respondents moderately disagreed' their intentions to actually use the library social media (m=2.96, sd=1.69), consistently (x=2.36, sd=1.548), or regularly (x= 2.16, sd=1.39), they were however optimistic that the it is worthy to use the library social media for the provision of and access to library services (x=4.49, sd=0.986)

Moderating Influence of Age, Gender and Experience

The third objective of this study was to assess the differences among respondents' personal characteristics such as age, gender and prior experience on variables relative to performance expectancy, effort expectancy, social influence, facilitating conditions, behavioural intention and use behaviour in academic libraries in Ghana. To evaluate the differential effects of moderators, the t-test analysis using the Levene's Test for Equality of Variances was assessed in terms of the difference in degrees of freedom (df). On gender, findings from the t-test analysis, reveal that apart from effort

expectancy (P=0.000; p<0.05) and use behaviour p=.038; p<0.05), there was no statistical significant difference between female and male respondents on all variables relative to performance expectancy (p=.320; p<0.05), social influence (p=.258; p<0.05) facilitating conditions (P=.231; p<0.05) and behavioural intentions (p=.362; p<0.05) With regards to age, there were no statistical significant differences between the 'young' respondents and 'old' respondents relative to their views on: performance expectancy (p=.008; p<0.05), effort expectancy (p=.011; p<0.05) and social influence (p=.012; p<0.05). The t-test analysis however presented significant differences between 'young' and 'old' respondents' relatively on facilitating conditions, behavioural intentions and use behaviour. For experience as a moderator, the respondents were divided into two main groups according to their prior experiences in the use of social media. Group 1 comprised respondents who had used social media for less than 5years, whilst group 2 includes those who have used social media for 5 years or more. Findings indicated no statistically significant difference for the two groups on performance expectancy: p=0.280, effort expectancy: (p=0.655; p<0.05), and social influence: (p=0.412; p<0.05). Statistical significance were however recorded for the two the groups on facilitating conditions: (p=0.036; p<0.05), behavioural intention (p=0.001; p<0.0), and use behaviour (p=0.000; p<0.05).

Strategies for Enhancing the Use of Social Media in the Academic Libraries

This section addresses the fourth research objective. It presents the descriptive statistics of statements used to measure strategies relative to key concepts, perceived to enhance the use of social media when observed. Concepts included: planning the use of social media, social media policy, patrons involvement in the academic libraries choice of social media, staff with requisite knowledge and skills in the use of the academic libraries social media platforms for their intended purposes, constant update of the libraries social media platforms, and encouragement of user feedback. Statements used to measure each concept were self-rated on a five point Likert scale where '1 =strongly disagree', '2=moderately disagree', '3=moderately agree' '4=agree' and '5=strongly

agree'. For the descriptive analysis, the "mean values" were used to determine respondents' level of agreement or disagreement with a particular statement on each concept. Thus, a score of '1' and a score of '5' demonstrate that respondents strongly disagree or strongly agree with a statement used to measure a particular concept respectively.

First, the results from the analysis of all statements show an appreciable level of the need for planning on social media among the respondents. All statements scored mean values above 4.7, suggestive that respondents either 'agree' and/or 'strongly agree'. Regarding the need for a social media policy, the mean values from the analysed responses reveal the respondents' affirmation of a policy as a social media use strategy. All statements recorded mean values above 4.5 showing respondents either 'agreed' and/or 'strongly agreed' with the statements on the need for a social media policy in the academic libraries. Further, the analysis of findings on the views of the respondents' on the involvement of patrons in the choice of social media platforms the academic libraries have adopted or intend to adopt and use depicts that academic libraries seem to 'agreed' and or 'strongly agreed' with the need for the academic libraries, to focus on social media accounts relevant to their users (m=4.62, sd=0.806), 'tailor appropriate information to target users on their preferred social media platforms (m=4.62, sd=0.782), to direct social media towards user needs and preferences (m=4.60, sd 0.819), and users' influence on social media platforms adopted by the academic libraries (m=4.55 sd=0.910).

Likewise, majority of respondents 'strongly agreed' and had positive responses, on the need for library staff with requites skills and knowledge to manage their social media platforms, with all statements recording mean values above 4.5. Additionally, analysis of the responses on the need for constant update of the libraries' social media platforms show that the respondents largely 'strongly agreed' with all statements used with mean values ranging from 4.70 to 4.75. Finally, the analysis of responses of the statements used to measure the views of respondents on the importance of feedback from patrons on the use of the academic libraries' social media platforms, generally depicts that the academic libraries perceive user feedback as a vital social media use strategy. All three statements used

recorded mean values higher than '4.5', demonstrating a strong level of agreement with the items on the scale.

Structural Equation Modelling Analysis

Results of Measurement Model

In this study, the adequacy of sample size, construct reliability and convergent validity were performed for the assessment of the measurement model. For the adequacy of sample size, the Kaiser-Meyer-Olkin (KMO) value obtained highly exceeded the threshold of 0.5 showing adequacy in the sample size. The Cronbach's alpha values obtained exceeded 0.82 verifying the construct reliability (George & Mallery 2016). For the convergent validity, three criteria were used, namely; the significant value of item loadings, composite reliability (CR) and the value of Average Variance Extracted (AVE). For this study, the standardised loadings for each factor loadings were all greater than 0.707 with an AVE higher than 0.5, and a CR value of each construct greater than 0.60 (Park *et al* 2019), showing a high proportion of commonality among the model constructs, and confirms the data used in the study model is reliable and valid.

Outcome of Study Hypotheses

The second and third objectives of the study were relative to the study hypotheses. A SEM analysis was carried out to test the study hypotheses to either confirm or refute the relationships hypothesised. The hypotheses tested relate to linking the independent variables (i.e. performance expectancy (H1), effort expectancy (H2), social influence (H3) and facilitating conditions (H4)) that bear on the conduct of the dependent variables {i.e. behavioural intention (H5) and use behaviour (H6)}, as well as the influence of moderating variables {gender (H7), age (H8) and experience (H9)} on the relationship between the dependent and independent variables. As presented in Table 2, the outcome of the study hypotheses shows that H1, H2, H4, and H5 were supported. H3 and H6 are rejected. H7, H8 and H9 were however partially supported. For instance, gender and experience moderated the path from PE, EE, and FC to UB   but do not alter from SI to BI and from BI to UB. Similarly, age moderated the path from PE, EE, SI and FC to BI and UB but not from BI to UB.

Table 2: Summary of Outcome of study Hypotheses

Research Hypotheses	Hypothesised Path	Result of Hypotheses				
		β	P	R^2	Remarks	
					Significant Level	Supported
H1	PE☐ BI	0.410	0.000	0.420	SS	Yes
H2	EE☐ BI	0.263	0.000	0.260	SS	Yes
H3	SI☐ BI	0.070	1.120	0.120	NS	No
H4	FC☐ BI	-0.181	0.000	0.18	SS	Yes
H5	FC ☐ UB	0.024	0.000	0.20	SS	Yes
H6	BI☐ UB	0.196	0.560	0.020	NS	No
					PS	Yes/No
H7	PE ☐Gen☐ BI	0.416	0.000			Yes
	EE☐Gen☐ BI	0.263	0.000			Yes
	SI☐Gen☐ BI	0.124	0.397	0.338		No
	FC☐Gen☐BI	0.196	0.000			Yes
	FC☐Gen☐UB	0.181	0.000			Yes
	BI☐Gen☐ UB	0.024	0.376			No
H8					PS	
	PE ☐Age☐ BI	0.408	0.000			Yes
	EE☐Age☐ BI	0.261	0.000			Yes
	SI☐Age☐ BI	0.124	0.000	0.437		Yes
	FC☐Age☐ BI	0.187	0.000			Yes
	FC☐Age☐ UB	0.196	0.000			Yes
	BI☐Age☐ UB	0.024	0.576			No
H9					PS	Yes/No
	PE ☐Exp☐ BI	0.410	0.000			Yes
	EE☐Exp☐ BI	0.263	0.000			Yes
	SI☐Exp☐ BI	0.128	0.248			No
	FC☐Exp☐ BI	0.182	0.000	0.531		Yes
	FC☐Exp☐ UB	0.196	0.000			Yes
	BI☐Exp☐UB	0.024	0.436			No
Note: SS= Significant; NS=Not Significant; PS=partially Significant β= Path Coefficient , P<0.05						

Proposed Framework to Optimise the Use of Social Media in Academic Libraries in Ghana

The purpose of this study was to propose a framework that may help academic libraries in Ghana to optimise the use of social media in their endeavour to provide library services as well as access to library resources. For this purpose, the study examined the extent to which various types of social media platforms are used, determine the influence of the key factors and moderators of the UTAUT on the behavioural intention and use behaviour of social media, and analyse the strategies regarding the use of social media in academic libraries in Ghana. In view of the study's findings, the study proposed the framework depicted in Figure 3. Discussions for this study are hence made in line with the recommended framework to offer worthwhile implications to serve as blueprints for academic libraries to increase their social media activities.
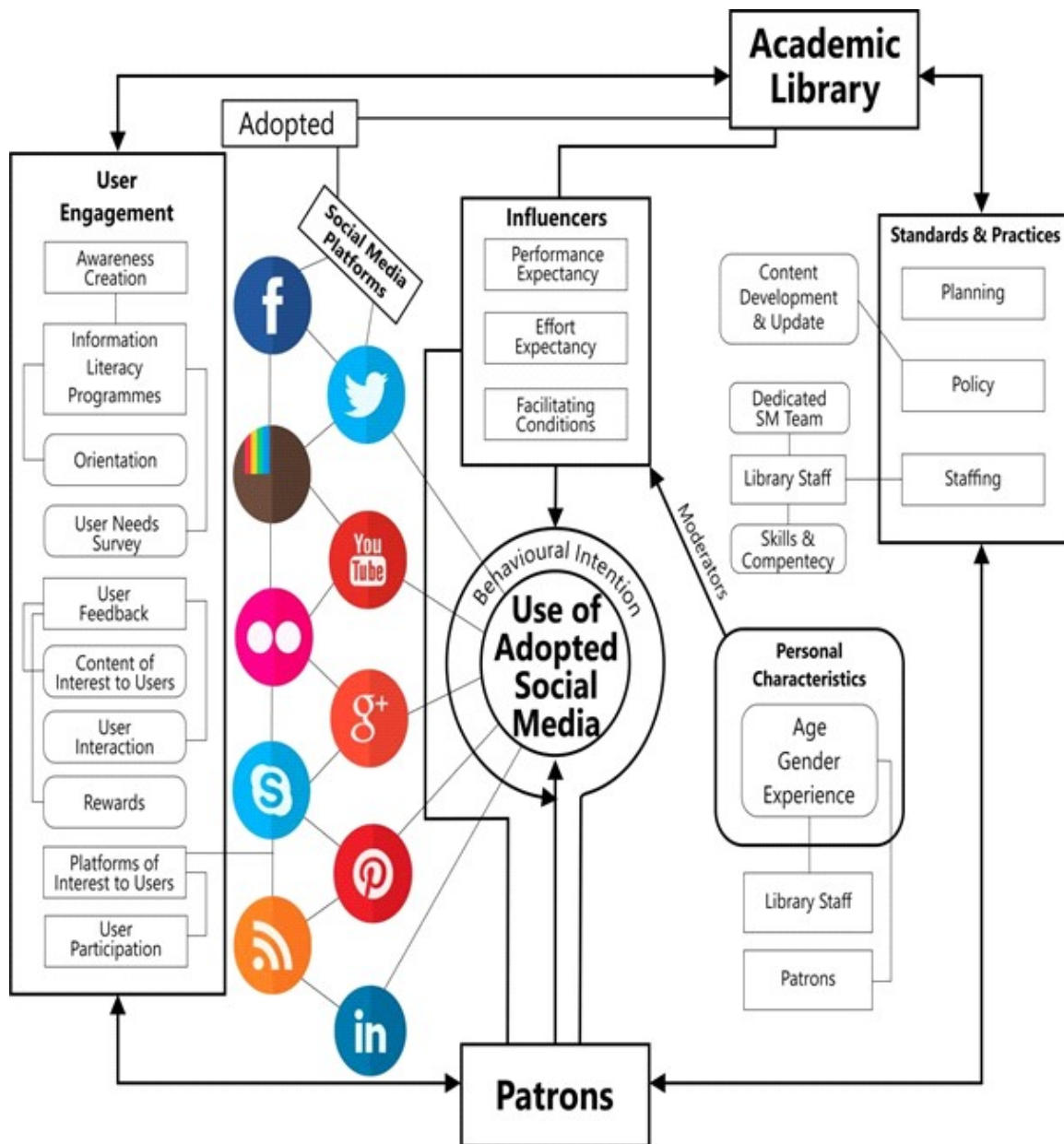

Figure 3: Proposed Framework to Optimise Social Media Use in Academic Libraries in Ghana.

Beginning from the extreme right to the extreme left of the recommended framework illustrated in Figure 3, it is anticipated that to ensure the success of social media implementation, academic libraries in Ghana should be leveraged strategically to take into account the best standards and practices of social media application in the libraries to help instil a mandate, key factors that may be judged as successful drivers to the intention to use and subsequent use of social media, as well as and factors that may drive user engagement with adopted and available social media platforms.

Standards and Practices

Undoubtedly, social media best practice implies the provision of available and satisfactory evidence of compliance with standards and practices. By standards and practices, this study as shown in the framework in Figure 3 refers to planning the use of social, availability of a social media policy and the availability of library staff with competency in the use of social media for the provision of library services. In other words, this study proposes that, careful planning, policy and staffing are essential in monitoring and tracking the academic libraries' activities on adopted platforms in an efficient and systematic way, to achieve its intended purposes.

First, the literature highlights how important a comprehensive planning and assessment approach is to the successful achievement of intended purposes of social media adoption and use (McCann & Barlow 2015). Likewise, in the academic libraries surveyed, findings confirmed the need for a social media plan as very vital by the majority of the respondents. Hence, academic libraries in Ghana are encouraged to develop social media plans to serve as indicators for the effective and efficient management and use of its social media platforms. Planning on the use of social media should however go beyond considering what social media tools to adopt or use, but on how best the academic libraries can set goals and define objectives to outline suitable measures in their social media efforts. This is because once the academic libraries have a social media plan specifying set goals and objectives, only then will they be in a position to choose the suitable social media platforms for providing and accessing library services.

Further, an essential component of any social media approach is the establishment of policies mandatory for patrons and staff to read before accessing and using these services Indeed, findings from this study affirmed the need for a policy document to serve as a guideline for the academic libraries social media adoption and use strategy. Nevertheless, the recognition of the concept of social media as a general phenomenon has resulted in a neglect of policy documents for social media applications in most academic libraries (Peacemaker, Robinson & Hurts 2016). That notwithstanding, academic libraries in Ghana should develop comprehensive social media policies to provide clear guiding principles on acceptable and unacceptable social media use behaviours in the libraries. These polices should define the guidelines and clearly explain the rules on content development and updates of the academic libraries' social media activities.

Besides, innovations such as social media are dynamic, and will therefore require human resource skills in the library to move along with the change. Consequently, the need for a dedicated staff with the requisite skills and knowledge in the use of such platforms is critical. In conformity with the literature, (e.g. Agyekum & Trivedi 2016) a majority of respondents in this study were very much in agreement and had positive responses on the need for library staff who are well trained on the use of social media for library services delivery, as well as a dedicated staff responsible for maintaining the academic libraries' social media platforms. However, a number of studies especially from Africa (e.g. Ahenkorah-Marfo & Akussah 2017) have reported lack of staff with the required knowledge and skills in the use of social media as one of the obstacles for effectively using social media to achieve its adoption objectives. Thus as shown in the proposed framework in Figure 3, academic libraries in Ghana are encouraged to have dedicated library staff with the skills, experience, and knowledge in the use of adopted social media platforms to help optimise the available resources and services using such platforms. These staff must be adaptable to new social media conditions to proactively meet the patrons of the academic libraries across time and generations. If possible a special dedicated team if not already in place, is necessary to come up with a social media programme in the respective academic libraries.

Influencers

As presented in the proposed framework in Figure 3, it is essential for academic libraries in Ghana to consider three key factors that may be judged as successful drivers to the intention to use and subsequent use of social media. Based on the findings from the SEM analysis for this study, these factors include performance expectancy, effort expectancy and facilitating conditions. First, like other studies in the context of social media adoption and use (e.g. Salahshour Rad et al 2019), this study found a relationship between performance expectancy and behavioural intention. This implies that the adoption and use of social media applications in academic libraries in Ghana is influenced by the trust that using such platforms to operate services will improve performance and accessibility.

Academic libraries in their periodic library programmes could emphasise the benefits associated with the use of such platforms to build patrons interest in their use for library services provision and access. Further, the study results also supported the relationship between effort expectancy and behavioural intention to use social media. This is in accordance with the literature (e.g. Chua et al 2018 etc.), and is suggestive that success in the use of social media lies mainly on how easy it is to use. It is therefore expected that when library services provided on adopted social media platforms are easily accessible, simple and with less mental efforts, staff and patrons of academic libraries will become comfortable in providing and accessing library services via such applications. Hence as part of the measures to optimising the use of adopted social media platforms in the academic libraries, social media platforms adopted should be more user-friendly, and easy to understand to stimulate and encourage their use for library services activities.

Additionally, this study found that facilitating conditions, in terms of required resources, continuous support, and requisite skills and guidance have significant relationship with the intention to use and actual use of social media. This result corroborates previous studies in the context of social media (e.g. Engler & Alpha 2018). Consequently, for the academic libraries the enabling facilities are central to the use of social media in an effective and efficient manner for its intended purposes. The academic libraries could therefore provide proper support, assistance and directions on how to use social media applications for library services. This the libraries can do with the use of online platforms such as YouTube, Libguides and Tiktok videos to offer short tutorials on its activities on social media.

Moderators

This study also indicates that the decision to use, and actual use of social media for the provision and access to library services as well as for contacting the libraries may be influenced by the personal demographic profiles (gender, age and prior experience) of the library staff and library patrons. As shown in the proposed framework in Figure 3, these personal characteristics have impact on the three key factors (performance expectancy, effort expectancy and facilitating conditions) influencing the intention to use and actual use of social media in the academic libraries surveyed. For instance, similar to other studies, (Odewumi, Yusuf & Oputa 2018) findings of this study showed, that for gender whilst males were more likely to perceive the use of social media as an easy to use platform for library services than females, females may use the library social media more often than males. Again, on age, younger individuals were found to use the library social media for providing services and for contacting the library when the needed supports for the use of such platforms are provided, than their older counterparts just like that of Hardy and Castonguay (2018). Regarding experience, this study concludes that given the requisite skills, support, guidelines, resources and assistance, library staff and library patrons in academic libraries in Ghana, with increased experience in the use of such platforms will have the tendency to use, and subsequently use such platforms to provide and access library services. Consequently, relative to the above findings on moderating effects of gender age and experience, academic libraries in Ghana need to appreciate that library staff and library patrons may attach different weights to various factors that influence their use of the library social media relative to their gender, age and prior experience in the use of such tools. Thus, to recognise and channel appropriate library services on its social media platforms, knowledge of the personal characteristics of library staff and library patrons is key.

User Engagement

Successful social media programmes require careful consideration of the needs and desires of stakeholders, which in the case of academic libraries, are faculty and students. With the limited time and resources to allocate to activities like the promotion of social media, the probable interest and the level of engagement of the library patron is critical. It is therefore important for an academic library to find out whether its patrons actually use a social media platform prior to a decision to adopt or not adopt it. This the academic libraries can do by engaging its users in their social media endeavours. Certainly, the assessments of the library staff alone may not fully explain the factors that contribute to the acceptance and use of social media platforms in academic libraries, because the user (patrons) constitutes the focal point and reason for which these services delivery tools are deployed. As such the level of user engagement on the adoption and use of such platforms to access library resources and services is very critical. The study presents some elements as part of the ways in which the academic libraries could engage their users, to optimise the use of adopted and available social media platforms to achieve its numerous intended benefits. These factors as presented in the proposed framework (from extreme left) include awareness creation, user feedback, adoption of platforms of interest to users, and user participation in the choice of social media tools for library services activities.

Regarding awareness creation, a key finding on the extent of use of the adopted social media platforms in the academic libraries surveyed was the lack of user engagement resulting in lack of awareness on the presence of the libraries' among its patrons. On average, more than 50% of the respondents had never used at least one of the social media platforms adopted by their academic libraries. Surely, as Howard et al (2018) exposed, most academic libraries have presence on one or more social media platform(s), but do not appear to have much interest in finding out patron's awareness and knowledge of the existence of such platforms. Indeed, as alluded in the literature, since most library patrons have generally fit into the social media age, and are familiar and comfortable with the use of varied social media platforms, libraries often tend to make social media assumptions about their users without consulting them (Jones & Harvey 2019).

Besides, further findings from this study also gave an indication, given that most of the respondents had never used the library social media for library services, 96.3% of them were reported positive reactions to follow their university libraries on varied social media platforms such as Facebook, Instant Messaging, Twitter, LinkedIn, and YouTube among others. This clearly confirms that they do not actually seem to know that their libraries were present or used any of such platforms for the provision of library services. In view of above, the academic libraries could create awareness about the libraries' social media adopted platforms by organising periodic social media literacy programmes to expose users to the various way of using social media applications to access and contact the libraries'. These literacy programmes as shown in the proposed framework in Figure 3 (under user engagement) could be offered during the libraries orientation programmes, promotional campaigns, and on the library home pages or websites to relay and boost the attention of patrons on current information pertaining to social media and its application for library services.

Furthermore, beyond a marketing tool, social media permits a feedback function as a conduit through which users can report grievances, compliment, inquire, and suggest (Enis 2017). It is therefore not sufficient for libraries to merely talk on social media; they are also required to listen. Indeed, the findings from this study commend the need for a social media feedback system to provide every opportunity to its users to submit their response, both positive and negative and to make constructive comments on library services through adopted social platforms. On the other hand, the literature (e.g. Jones & Harvey 2019) seems to indicate a low level of interaction with library users on adopted social media platforms resulting in lack of user feedback. All the same, as pointed out in the proposed framework in Figure 3, academic libraries in Ghana should not use social media solely as an avenue to convey news and information to patrons, but also as an venue for interacting and engaging discussion. In other words, the libraries should dialogue with it users to ascertain their social media preferences, and decide on which platforms to use based on an understanding of their users to avoid the possibilities of channelling efforts in a wrong direction.

Finally, similar to the library literature on academic libraries' use of social media (e.g. Deodato (2018) this study reported the use of at least one social media tool, with Facebook, Twitter and Instant Messaging as the prominent platforms used to keep patrons informed and updated on the library's daily information services and support. The use of platforms such as (in order of importance), YouTube, LinkedIn, blogs, RSS feeds, Bookmark, wikis, Snap Chat and Pinterest were minimal. However, even though social media enable the academic library to meet users in their own spaces where ever they may be, many academic libraries are still challenged in determining which tools to use, which ones to discard or maintain and how to assess outreach effectiveness (Gaha 2015). Indeed, few academic libraries have deployed social media that link directly with the libraries' mandate (Xie & Stevenson 2014). Jennings (2012) emphasised the consequence of selecting social media platforms and noted that libraries must concentrate and choose social media applications that are pertinent to their user community. Accordingly, a key approach to achieving the social media objectives in the academic libraries in Ghana is to focus on platforms that are of interest to users. As presented in the proposed framework on 'social media platforms', given that Facebook, twitter and instant messaging were discovered as the prominent social media tools in the academic libraries' surveyed, the academic libraries could explore and extend the use of other social media tools such as Google+, Flickr, wikis, RSS, blogs, Pinterest, and LinkedIn for varied purposes. LinkedIn for instance can be leveraged by the libraries for offering selective dissemination of information (SDI), to provide special library services to specific library users for the purpose of linking library users with users in their field of interest.

Conclusion

Social media have become not only a major common channel of communication among peers and relatives, but also an innovative, yet cost-effective avenue for academic libraries to enhance the quality of their services to patrons. Developments in social media have improved library services tremendously by offering the potential to communicate with users more directly with minimal expense as compared to the traditional mediums of communication, and have created more friendly social environments for accessing and disseminating knowledge. Today, with the induction of social media, the inured role of providing access to collections in academic libraries from traditional library resources such as catalogues, databases or even books have changed. In fact, the increase and broad utilisation of social media in recent years has resulted in a paradigm shift in terms of the traditional function of academic libraries as a physical accumulation of research material to a virtual community. This study draws on the UTAUT theory to examine the adoption and use of social media in academic libraries in Ghana, with the aim of assessing the extent of use, factors influencing use and strategies towards optimising use. Findings from the SEM analysis presented performance expectancy, effort expectancy and facilitating conditions as significant predictors of behavioural intention and use behaviour of social media, whilst refuting the influence of social influence on behavioural intention, and behavioural intention on use behaviour of social media in the academic libraries surveyed. Based on the literature reviewed, together with the outcome of the study findings, a framework is proposed to direct the adoption and use of social media for the provision of and access to library resources and services, as well as for contacting academic libraries in Ghana.

Findings of this present study make practical contributions to academic libraries that use social media for delivering services to patrons, and may serve as a guide for future researchers in their understanding of the acceptance and use of social media as a service provision platform among academic libraries in Ghana. First, the development and use of information technology such as social media requires high budget and investment. As such, understanding the factors that influence the behavioural intention to use and use behaviour of social media is especially critical for academic libraries with often insufficient budget. Further, the current study can be implemented as the guidelines for the effective development of social media strategies to encourage the adoption and use of such platforms especially in academic libraries in developing countries. Such academic libraries could use these findings to make informed decisions that are related to the adoption and use of social media

for the provision and access to library services and resources and thereby improve patrons' engagement in the use of such platforms.

Despite the theoretical and practical contributions a drawback of this study is concerned with the generalisability of the study findings. Since this study focuses specifically on academic libraries in Ghana, there are concerns regarding the applicability of the results to other libraries across the globe. Future research could hence consider a cross-country comparative study on of social media use in different academic libraries.

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Information Behaviour on Loan Procurement by Textile Traders in Nigeria

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Abstract

This study is an exploratory research which examined textile traders' information behaviour on loan procurement. The study adopted the qualitative approach. Purposive and snowballing techniques were used in selecting 35 traders who were major players in the market and data were collected through face-to-face interviews. Data collected were analysed thematically. Findings showed that information on loans with low interest rates was the most frequent information need and face-to-face communication with information sources was most preferred when seeking information on loan procurement. The most patronised loan source were the cooperative societies, while microfinance banks were the least. Challenges to loan procurement included disinformation from loan sources and risk of falling victims to fraudulent transactions. Limited patronage of microfinance institutions indicates the need for the Federal Government of Nigeria to review the activities of these institutions and ensure that they are meeting their objectives especially since they were specifically set up to cater for the financial needs of Micro, Small and Medium Enterprises (MSMEs).

Introduction and Literature Review

Micro, Small and Medium Enterprises (MSMEs) play a major role in Nigeria's economy as well as most economies globally, particularly in developing countries. According to the World Bank as stated in PWC (2020) report, MSMEs all over the world constitute about 90% of businesses and over 50% of employment. In Nigeria, MSMEs account for about 50% of the nation's Gross Domestic Product and more than 80% of employment. The sector certainly has a big potential to improve national development through employment generation, development of indigenous entrepreneurship, income generation as well as urban and rural development (Gbandi and Amissah, 2014). However, one of the major challenges faced by MSMEs especially in developing countries, is the dearth of financial support from credit sources in form of loan facilities, which therefore results to setbacks in the productivity of the MSMEs (Atogenzoya et al., 2014; Belgavi *et al.,* 2019).

As identified by Nwakoby and Okoye (2014), MSMEs in Nigeria primarily depend on bank loans for financing. However, most times these MSMEs which include traders, lack access to these loan facilities. Some studies have noted that a likely factor responsible for this is lack of easy access to reliable credit information. (Belgavi *et al.,* 2019; Ukachi, 2015; World Bank, 2019). Moreover, Breivik (2005) and Adekanye *et al.* (2015) emphasised that nowhere is the need for information greater than in the MSMEs which are the backbone of the nation's economy, and these include traders who in the context of this study are textile traders in Bola Ige International Market, Ibadan, Nigeria. Information has the potential to increase the capacity of these traders to make sound

and rational market decisions (Yue *et al.,* 2000). Yusuf (2012) showed that meaningful information from relevant information sources is needed to be able to make the right decision as well as to reduce uncertainty.

However, as shown in Wilson (1981) model of information behaviour (Figure 1), seeking information on loan procurement begins with the recognition of a need, which arises when a trader senses a problem or an information gap. In a study conducted by Adekanye *et al.* (2015) on the information seeking pattern of Nigerian textile market women, the study noted that these women are intellectually sensitive to recognise their information needs, which cover many areas that have direct and indirect impact on their businesses. These include market related information, information on cooperative societies, loans and credit facilities, manufacturer information and governmental policies among others. Subsequently, the need for information to fulfil a task, or to satisfy the curiosity of the mind drives the traders to seek for information. In seeking information, traders interact with different sources which could be formal or informal (Nwosu *et al.,* 2014). In a study conducted by Agyemang *et al.* (2018) on the information seeking behaviour of krobo bead producers in the eastern region of Ghana, the study reported that the bead makers sought information from friends, family, neighbours, television, radio, NGOs, as well as village meetings, seminars/workshops and bead making associations.

Information use is a factor that drives all other factors of information behaviour because it represents the ultimate purpose for which information is needed (Cole, 2011). It involves an individual's interaction and incorporation of the acquired information (Wilson, 1999). Therefore, for textile traders, information on loan procurement received aids a trader in achieving the desired goal and such information can also be share with other traders, hence information sharing is an important aspect of information behaviour. It is an essential component in all collaborative activities and helps bind groups and communities together, because when information is not effectively shared, collaborative group work fails (Davenport and Hall, 2002).

The need to understand the information behaviour on loan procurement by textile traders cannot be overemphasised considering the fact that

according to National Bureau of Statistics (2019), in the manufacturing sector, textile, apparel and footwear sub-sector made the second largest contribution to Nigeria's manufacturing (after food, beverage and tobacco) with a total output of ₦355bn in the third quarter of 2019. This is a huge achievement bearing in mind that finance is the second most cited constraint to MSME growth *(World Bank, 2019).* The International Finance Corporation (IFC) reported that about 40% of formal MSMEs in developing countries have an annual unmet financial need of $5.2 trillion.

According to World Bank (2019), financing MSMEs in Nigeria is very critical if they are to effectively play their role in the development of the nation's economy. The need for loan facilities is therefore inevitable for textile traders and obviously, they would exhibit specific behaviours in their quest for information on loan procurement. Atogenzoya *et al.* (2014) explained that, for traders who are starters in their trade, the problem is often funding required to get their business started while for the already established ones, the problem is inadequate finance required to fund their day-to-day operations and to expand their business. Loans can be procured from either formal or informal sources (Aruwa, 2004; Mamman and Aminu, 2013). The informal sources consist of informal finance institutions like friends, relations, money lenders, as well as savings from associations otherwise known as co-operative societies (Agbaeze and Onwuka, 2014). The formal sources on the other hand include, microfinance banks, commercial banks and international development agencies.

In a previous study, Adekanye *et al.* (2015) conducted a study on the information seeking-pattern of Nigerian textile market women. The study which adopted a descriptive survey research design covered various textile markets located in South-western and South-eastern geopolitical zones of Nigeria. However, a limitation of this study is that it investigated the general information seeking pattern of textile traders with no specific focus on financing. It is noteworthy that despite the enormous contribution of the textile sub-sector to the country's economy, and their need for financial support, little is understood about the information behaviour on loan procurement by textile traders. Hence, this study examines textile traders' information behaviour on

loan procurement. The study adopts Wilson (1981) model of information behaviour. It examines the traders' information needs on loan procurement, their information sources, information use and exchange of information on loan procurement. The specific objectives of this study are to:

1.   Find out the information needs on loan procurement by textile traders.

2.   Investigate information sources on loan

procurement available.

3.   Examine the preferred information sources.

4.   Understand the textile traders' use of information on loan procurement.

5.   Examine exchange of information on loan procurement.

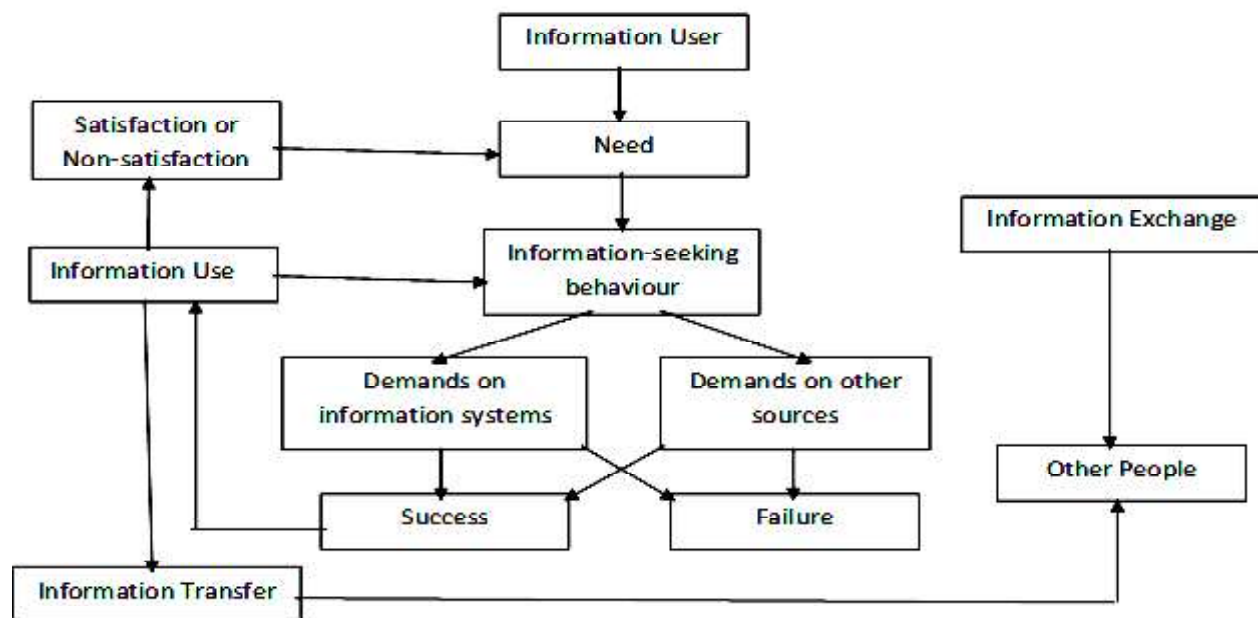6.   Investigate challenges to information seeking on loan procurement.

Figure 1: Wilson (1981) Model of Information Behaviour

Research Methodology

Location and Population of Study

This study adopted the descriptive research design and qualitative approach to data collection. The location of the study is Bola Ige International Market, Ibadan, Oyo State Nigeria. It is one of the biggest textile markets in Africa, and the first largest textile shopping centre in the Southwest of Nigeria (Fawole, 2012; Kareem-Ojo, 2010). The population of study comprised all textile traders at Bola Ige International Market, Ibadan. This population is however indeterminate. According to the Chairman of the market it is difficult to give a precise estimate of the

total number of textile traders in the market. This is largely due to the very large size and population of the market as well as its informal arrangement. Notwithstanding, it was reported that textile traders comprised 80% of the traders as the market was originally designed for textile traders.

Sampling Procedure

Since the population of textile traders in this market is indeterminate, non-probability sampling technique was used in arriving at the required sampling size of 35. Purposive sampling was applied in selecting textile traders who were regarded as the major players at the market, as recommended by the Chairman of

the market. Based on the principle of saturation, the sample size of 35 respondents was considered adequate for the study (Given, 2016). However, snowballing technique was used in selecting respondents who were willing to participate in the study. This was achieved through each cloth seller introducing the researchers to another cloth seller in the league of major players. Interestingly, these textile traders cheerfully acknowledged referrals from their colleagues and participated in the study.

Data Collection Method

Qualitative data was collected using face to face interview which allowed the participants to respond in their own words (Johnson and Christensen, 2019). The interview guide was designed in English and translated into Yoruba Language which is the language mostly spoken by the textile traders. The interview guide was structured into 6 sections as follows:

Section A: Demographic characteristics of respondents

Section B: Information needs on loan procurement by the respondents

Section C: Information sources on loan procurement available and preferred by the respondents

Section D: Loan procurement sources used by the respondents

Section E: Information exchange on loan procurement

Section F: Challenges to information seeking on loan procurement

Administration of Instrument and Data Analysis

The interviews were conducted in the textile traders' shops and each interview lasted approximately 30 minutes, excluding periods where the interviews were paused to allow the traders attend to their customers. The interviews were conducted in Yoruba language as majority of the textile traders in the market are Yoruba. Data collection lasted 2 weeks, every day, from Mondays to Saturdays. All interviews were conducted between 3 to 7 p.m. as participants accepted to be interviewed only during these hours of the day. Interviews were recorded with a smartphone device. Data collected in Yoruba language was transcribed and translated into English. Subsequently, thematic analysis of the data was done. Thematic analysis made it possible to identify, analyse and report patterns within the data (Braun and Clarke, 2006).

Results and Discussion

Demographic Characteristics of Respondents

The table on demographic characteristics shows that most of the participants were females (57%), while 68% were between the ages of 31 to 50 years. Majority of the participants were married (94%), 60% practised Islam, and 60% were educated at the secondary level. In addition, almost a third (31%) of the respondents had 21 to 30 years of experience in textile trading, followed by 20% with 11 to 20 years of experience. Generally, the respondents were intensively involved in their work as textile traders as most of them (91%) had no other occupation they practiced.

Demographic characteristics of respondents

Variable	Frequency	%
Gender		
Male	15	43.0
Female	20	57.0
Age Category		
21-30	2	6.0
31-40	12	34.0
41-50	12	34.0
51-60	3	9.0
61-70	4	11.0
71-80	2	6.0
Religion		
Christianity	14	40.0
Islam	21	60.0
Marital status		
Married	33	94.0
Single	1	3.0
Divorced	0	0.0
Widowed	1	3.0
Level of education		
Primary	2	6.0
Secondary	21	60.0
OND/NCE/Diploma	5	14.0
HND/Bachelor's Degree	6	17.0
Master's Degree	1	3.0
Other occupation		
Yes	3	9.0
No	32	91.0
Years of experience in textile trading		
Less than 1	1	3.0
1-10	11	31.0
11-20	7	20.0
21-30	11	31.0
31-40	3	9.0
41-50	1	3.0
51-60	1	3.0

Information Needs on Loan Procurement

Majority of the respondents needed information on *loans with low interest rates.* Many of the textile traders complained that loan facilities with excessive interest rates negatively affect their businesses and their emotional state of mind. This was expressed by some responses below:

> *We want to know the interest on the loan that we take. The interest is what we are after because if the interest on the loan is too much, it affects our business negatively. We want to know the amount of interest on the money that we want to borrow.* (Female, 41-50 years old, 21-30 years trading experience).

> *We are interested in loans with low interest that we can afford to return. If the interest is low, the money we borrow will be useful to us because not all of us have money. We want loans that can give us rest of mind because we cater for ourselves and our children...We do not want loans that will put us into trouble.* (Female, 61-70 years old, 31-40 years trading experience).

However, responses from about a third of the respondents also showed that they needed information on the *duration of a loan and mode of repayment.* These respondents reported requiring information on whether their proposed loans would be repaid at once or in scheduled instalments.

> *Our information need is that whenever they want to give us a loan, let them tell us when to pay back, whether on a monthly or daily basis.* (Female, 31-40 years old, 1-10 years trading experience).

> *We want to know...how will we return the loan that we obtained?* (Male, 41-50 years old, 1-10 years trading experience).

Information Sources on Loan Procurement Available

Face-to-face communication with loan sources was cited as the major information source on loan procurement available to the textile traders. According to the respondents, employees of the various loan sources visit their shops and interact with them, and are able to give them information required on loan procurement. Some traders also reported visiting the loan sources at their offices:

> *Firstly, through face-to-face sources. Just like what you are doing now, they come to the market to meet us. They assign employees to come here to speak to us about loans. The employees they assign this duty are usually youths. They are always in uniform with their institution's name tagged on the uniforms.* (Female, 31-40 years old, 1-10 years trading experience).

> *They do come to the market to inform us. They will move around the market to talk to us. We receive this information from "face to face communication with loan sources, through word-of-mouth. They will tell us their location, phone numbers, and so on.* (Male, 41-50 years old, 21-30 years trading experience).

> *We visit the microfinance banks for information whenever we want to borrow money from them.* (Male, 41-50 years old, 1-10 years trading experience).

> *Personally, I only receive my information from where I want to borrow money.* (Female, 41-50 years old, 21-30 years trading experience).

Other sources of information on loan procurement reported by respondents include colleagues, internet, television, telephone, radio and handbills:

> *I can receive the information from my colleague. If my colleague finds a*

convenient loan source, my colleague can recommend it to me. (Female, 61-70 years old, 1-10 years trading experience).

There are also some that are accessed...through the internet. (Male, 41-50 years old, 1-10 years trading experience).

Also, through the telephone. There are now a variety of loan sources that give us information through the telephone. (Female, 31-40 years old, 1-10 years trading experience).

They also advertise on television. (Male, 41-50 years old, 1-10 years trading experience).

They do come to inform us in this market. They will give us pamphlets or fliers. When we read it and understand what is relevant to us, then we will go to their offices. (Female, 31-40 years old, 1-10 years trading experience).

Information Sources Preferred and Factors Influencing Preference

Findings from interview data showed that respondents had access to information on loan procurement through various means including face-to-face communication with loan sources, information from market colleagues, internet, television, radio and telephone. However, majority of them preferred to receive information on loans through *face-to-face communication with loan sources*. Some of the responses given by respondents when asked for their preferred information sources on loan procurement are as follows:

The source that satisfies us most is what you are doing now—you are talking to me physically. In other words, we prefer face to face communication with loan sources (Female, 31-40 years old, 1-10 years trading experience).

We prefer face to face communication with loan sources. Let us see each other physically. One-on-one conversation. (Male, 41-50 years old, 1-10 years trading experience).

In the case of face-to-face communication, the loan sources visit the textile traders at their shops to provide information on loan facilities. Majority of the respondents reported preference for this traditional technique of communication over others such as radio, television and internet. Some traders cited the fact that face-to-face communication with loan sources make it easier for them to understand the information received and they are able to ask questions.

I am able to know in-depth, so many things about the loan and I can ask questions (Female, 41-50 years old, 21-30 years trading experience).

You will be able to ask questions. They will have your time, you will ask questions and you will understand (Male, 41-50 years old, 11-20 years trading experience).

Whoever wants to organise and inform us about loan facilities should do so through face-to-face sources. This way, we will understand it better than when we receive information through television or through other means. Because we can give our feedback on what they tell us. (Female, 31-40 years old, 1-10 years trading experience).

Most respondents reported that information received through other means exposes them to misinformation, fraud and scam.

When you go on the internet, by the time you are into the deal, you will find out that there are so many things that you are not aware of. (Female, 41-50 years old, 21-30 years trading experience).

We do listen to them on the radio and television but they do not fulfil what

they say. (Male, 31-40 years old, 21-30 years trading experience).

Considering the current state of Nigeria, many people do not trust sources from the telephone and internet...We do not want to fall victim to fraudsters and "419". (Male, 41-50 years old, 1-10 years trading experience).

Many of the information we hear on the radio are false. When you get to their location, we realise that it is just a single shop whereby they can abscond at any time. They are not the real owner of the company. They just rented the place for business purposes. When we get there, we may not meet them there. But when the banks come here, we will see their ID cards. We will confirm that they are well established. (Male, 41-50 years old, 21-30 years trading experience).

Use on Information on Loan Procurement

Majority of the respondents reported taking loans based on the information received from the loan sources that meet their needs.

Ha! We make use of this information and loans are given to us upon our request. If they give us the information we need, we will act as required from the information we receive, we are given the money we need, and then we give thanks to God. (Female, 31-40 years old, 1-10 years trading experience).

We make loan request and once we succeed in receiving the loan, we will carefully abide by the agreement that we have signed and we use the money for the right purpose so that when we return it at the right time, we can always receive another loan when we request for it. (Male, 51-60 years old, 31-40 years trading experience).

However, some respondents disclosed that although they receive information on loan procurement from loan sources, they do not act on them. This was especially observed with the elderly traders. They believed that they are too old to engage in the rigor and risk involved with taking and managing loan facilities.

I am getting old. I do not want to have hypertension too. That is why I do not take loans anymore. I manage the little money that I have for my business...I do not want to take a loan that will make me have hypertension. If I owe you kobo, I will be very worried. (Female, 71-80 years old, 51-60 years trading experience).

Remember I told you that I am getting old and I am a widow. I cannot go through that stress anymore. (Female, 61-70 years old, 1-10 years trading experience).

I ignore the information because I do not like to borrow money often...I do not like to take loans because if I am unable to return the loan, I will be in trouble. (Male, 61-70 years old, 41-50 years trading experience).

However, other respondents reported that they ignored any information on loan procurement due to the humiliating treatment experienced by loan defaulters. They expressed that sometimes defaulters resort to begging for money around the marketplace to recoup the money they owed and forfeit their properties including their shops.

I ignore the information because I don't take loans. I don't have interest. Due to what we see, we don't go close at all. They make defaulters go through humiliating means to source for money that they owe. (Female, 41-50 years old, 21-30 years trading experience).

If we are unable to pay back, they will seize all our belongings, they will lock

us up in the toilet. (Female, 31-40 years old, 1-10 years trading experience).

Information Exchange with Fellow Traders

Majority of the traders reported sharing information on loan procurement with fellow traders in the market. Most of them disclosed that they usually share such information with colleagues with whom they have some level of relationship and who they believe also need the information.

Yes. Because my colleagues need it also. I will explain how I took the loan I use for my business. When they draw close to me, I will share the information of how to go about it, how much I was loaned, and so on. If satisfied with the information, they can proceed to do the same. (Male, 31-40 years old, 1-10 years trading experience).

We do share this information with ourselves. If my colleague tells me of her need for a loan, I will share the information of where I borrowed my money from with her. We all know that there is no money in Nigeria. Everybody is hustling. (Female, 31-40 years old, 11-20 years trading experience).

Respondents who reported engaging in information exchange were further asked if they received anything from their colleagues in exchange for information shared. Almost all of them reported receiving nothing in exchange for information on loan procurement. According to them, it is unnecessary to seek for anything in return as they share such information in order to assist their colleagues. They also believed that their colleagues will also reciprocate when necessary.

What should we seek for? We do so to assist one another. (Male, 31-40 years old, 1-10 years trading experience).

Ha, I must not seek anything in return. If they receive any information that is useful to me, they will also share with me. (Female, 41-50 years old, 21-30 years trading experience).

A few respondents reported seeking favour in exchange for information on loan procurement. Such favour involved seeking financial support from their colleagues in order to repay a loan facility and request to stand as guarantors for loan taken by the respondents.

If my colleague makes better profit today, I can seek his/her financial support to enable me to return the loan that I obtained. If I make a profit the next day, I will return the money to my colleague and he/she may also seek financial support from me if the need arises. (Female, 31-40 years old, Category of 1-10 years trading experience).

Sometimes, if I am unable to gather enough money to return a loan that I obtained, I can reach out to my colleague for monetary assistance and I will do the same for him/her too when the need arises. (Female, 31-40 years old, 11-20 years trading experience)

However, some respondents expressed that they do not share information on loan procurement with their colleagues. The major reason cited for this is the fear of loan default especially since most times they have to stand as guarantors for these colleagues. They also believe that loan matters are personal and confidential to them, hence, they do not share the information on loan procurement with their colleagues.

Personally, I do not share information with anyone because I do not want a situation where after sharing this information, I stand as their guarantors, then they will not return the money they borrow. So, I keep it to myself. (Female, 61-70 years old, 11-20 years trading experience).

No. To me, a loan is a personal thing. It is not something you compel people to do or advise people to do. You know, a loan is something you have to pay

back. It is a personal decision and the decision will come from your mind. So, I don't share it. (Female, 41-50 years old, 21-30 years trading experience).

Loan Sources Mostly Used

The textile traders reportedly used mostly three loan sources and these were cooperative societies, commercial banks and microfinance banks. More respondents patronised cooperative societies for loan facilities than commercial and microfinance banks. Reasons cited include low interest rates on loans, higher amount of loan that can be obtained, monthly repayment as against daily repayment as experienced with other loan sources, and the fact that they believe that information on loan procurement received through cooperative societies are easily understood by them.

I do cooperative. Cooperative is simple. You get times two of your contribution and they will make sure they take it on a monthly basis. (Male, 51-60 years old, Less than 1 year trading experience).

I usually make use of daily money contributions because they borrow us money when we need it based on our capacity to pay back. We make our money contributions from the beginning of the month. I like it because the interest is low. (Female, 41-50 years old, 21-30 years trading experience).

A few of the respondents mostly used commercial banks and the most important reason cited is the fact that commercial banks are recognised by government.

Commercial bank! Because they are well established and recognised by the government. (Male, 31-40 years old, 11-20 years trading experience).

As an elite, I make use of commercial bank loans mostly. (Female, 31-40 years old, 1-10 years trading experience).

The least loan sources used are the microfinance banks. Most respondents reported excessive interest rate on loans and treatment given to loan defaulters by microfinance banks as reasons for low patronage of these banks.

The interest rates of microfinance banks is too much. Imagine taking a loan of ¦ 500,000 and returning the money with an interest of ¦ 200,000. That is just too much. Too much that we cannot make profit from it. (Female, 31-40 years old, 11-20 years trading experience).

If you are unable to repay your loan, they seize all your belongings and lock you up. (Female, 41-50 years old, 11-20 years trading experience).

Challenges to Loan Procurement

The first aspect investigated challenges to information seeking on loan procurement and challenges cited include disinformation from information sources, and risk of falling victim to fraudulent transactions. These challenges were mostly in reference to commercial and microfinance banks. They reported that information on loan procurement received from some information sources were not always straightforward and sometimes misleading. Some respondents also reportedly fell victim to fraudulent transactions from fake loan sources that visited them in their shops. Below are excerpts from some of their responses:

The information they give us when they come here usually contradicts what we experience when we get to their office. They give us wrong information. For instance, when we get to their office, we realise that the amount they request as interest is different from what they tell us when they come here. This is part of the challenges that we face. (Female, 41-50 years old, 21-30 years trading experience).

The information given to us by some loan sources when they approach us is different from what plays out when

we borrow money from them. Such information is inaccurate. They are not straight forward. (Male, 31-40 years old, 1-10 years trading experience).

The challenge we face is that if a person is not careful, such a person can fall victim to fraud and 419 as many of them now engage in this. (Male, 41-50 years old, 21-30 years trading experience).

Next, the challenges to loan procurement itself were investigated. Excessive collaterals; high interest rate; long and stressful process of obtaining loans; difficulty in repaying loans due to low patronage and slow sales, loan mismanagement and difficulty in securing a guarantor were major challenges cited.

The collateral that banks demand from us is too difficult to find. If you want to take a loan of N10,000,000, they will demand for a collateral of N20,000,000 and if you do not have assets that are worth that amount, they will not give you the loan. (Male, 51-60 years old, 31-40 years trading experience).

The process also takes too long. They make us go through a lot of stress for up to one or two months before we are given the loan. (Male, 21-30 years old, 1-10 years trading experience).

Some traders are greedy and irresponsible with money. If you give them N10,000,000 today, they will be left with 10 Kobo tomorrow. People should learn to be accountable and responsible with money. (Male, 41-50 years old, 21-30 years trading experience).

For instance, they will demand for two guarantors and it is difficult to find these guarantors because people will refuse to act as your guarantor. They are afraid that if you do not pay the

loan at the right time, it will lead them into trouble. (Female, 41-50 years old, 21-30 years trading experience).

Discussion of Findings

This study investigated the information behaviour on loan procurement by 35 textile traders at Bola Ige International market, Ibadan, Nigeria. Majority of the traders that participated in the study were females. Although this study employed non-probabilistic sampling techniques which makes it difficult to generalise the dominance of female traders, previous studies have noted that female population is more at the Bola Ige International market (Badiora and Odufuwa, 2019; Kareem-Ojo, 2010).

Previous studies reported that information on sources of business funding is the major information need of small-scale-businesses (Adekanye *et al.,* 2015; Ugbala *et al.,* 2020). However, findings from this current study show that textile traders are not just interested in sources of business funding, but they need information on loan sources that offer low interest rates. They also need information on loan duration and mode of repayment offered by the loan sources. As noted by Oladimeji *et al.* (2017), loans with low interest rates enhance the performance of SMEs. Textile traders in this market are very passionate about obtaining loan facilities which interest will not cripple their businesses. In meeting these information needs, face-to-face communication with loan sources is the major information source available and referred by the traders. In this case, the loan sources visit the textile traders at their shops to provide information on loan facilities. Majority of the respondents reported preference for this traditional technique of communication over others such as radio, television and Internet. These findings are in agreement with other studies (Pitra and Zauskova, 2014; Yap and Lock, 2017) that have identified face-to-face communication as the most effective form of communication.

According to Freitas and Mira da Silva (2018), face-to-face communication allows the information recipient to collect sufficient information from the tone of communication, including verbal and non-verbal communication. The textile traders believe that information received directly from loan agents through face-to-face interactions are better

understood and issues can be clarified immediately. Moreover, information received directly from these loan sources are perceived to be more accurate and reliable than they would receive on the Internet, radio or other sources. Issues of misinformation and fraud are among reasons for minimal interest in receiving information through Internet, radio or telephone. Previous studies have also shown less use of news media and greater use of other information sources due to lack of trust (Kalogeropoulos *et al.*, 2019; Strömbäck *et al.,* 2020; Wasserman and Madrid-Morales, 2019) According to the textile traders, information on loan procurement received from these other sources other than face-to-face communication with loan sources, is often different from what they are given when they eventually visit loan sources at their offices. The implication of this experience by the traders is that misinformation compromises their ability to make informed decisions on loan procurement.

A key finding in this study is that the textile traders differed in their use of information received on loan procurement. According to Molleman, Kurvers and van den Bos (2019), information use differs across individuals, groups and populations. Among the textile traders, there are two (2) categories on information use. The first category are respondents who proceed to take the loan from a source that most satisfies their information needs and majority of the textile traders are in this category. The second category are respondents who ignore the information received from the information sources and many older traders are in this category. Majority of the older traders reported lack of interest in loan facilities due to their age. Similar finding was reported by Onu, Nmadu and Tanko (2014) in a study of farmers' awareness of loan procurement procedures in Niger State. The study reported that farmers' interest in loan procurement decreases with age. It would have been expected that textile traders who are older and more experienced in textile trading would be interested in increasing their business capital through loan financing. However, most of the traders in this category are not ready to go through the rigor of loan applications, as well as the reported humiliating experience meted out to loan defaulters.

Information exchange with colleagues was well reported by most of the textile traders. Many of them however only share such information with fellow traders with whom they have close relationship. Previous study by Akosile and Olatokun (2020) corroborated that interpersonal communication engenders knowledge sharing. Earlier, Anand *et al.* (2019) also noted that knowledge sharing effectiveness, is a function of the degree of interpersonal communication between parties involved. Similarly in Donnelly (2019) study, software developers expressed preference for knowledge sharing through interpersonal communication. Such interpersonal communication is observed among textile traders who deal in similar goods. For most of these traders, information exchange is free as they do not seek anything in return for information shared. The general belief is that they share information on loan procurement in order to assist their colleagues. For few traders however, information sharing is not free as they seek financial assistance from those with whom they share information on loan procurement, and sometimes request for such ones to stand as guarantors for their own loan facilities. It is not surprising and unexpected that some textile traders would seek favour in exchange for information on loan procurement. Wu and Zhu (2012) previously cited reciprocal benefits as one of the factors influencing knowledge sharing in an organization. Moreover, Babalola and Omotayo (2017) also identified perceived benefits as one of the significant determinants of knowledge sharing among information technology artisans. Conversely, some traders held the position that information on loan procurement is personal and confidential to them, hence they do not share. Others reported not sharing in order to avoid standing as guarantors for colleagues who might end up defaulting on loan repayment.

Surprisingly, this study finds that cooperative societies are the loan sources mostly patronised by the textile traders. According to Abdullahi, (2018), informal sources of finance including cooperative societies, remain the main source of funding for the MSMEs in Nigeria. Peter *et al.* (2018) also that the lending model of cooperative societies are designed to effectively reduce the burden of collateral and interest charges on MSMEs. This finding in the current study is however surprising considering the fact that there are about six commercial banks in the market and surroundings, as well as some microfinance banks that are expected to provide more funding for textile traders than the cooperative

societies. Added to this is the assumption that the perceived high volumes of business transactions observed among the textile traders can hardly be supported by finances from cooperative societies considering their low capital base. It is important to note that cooperative societies are prominent loan sources for textile traders in this international market due to the reported excessive interest rates and stringent collateral requirements demanded by the commercial banks. The implication of this finding can thus be seen from two ways. The first is that textile traders at Bola Ige International market would not sacrifice their consciousness of interest rates for large funding, hence, they would prefer to patronise cooperative societies for loans. Secondly, their patronage of cooperative societies due to their less stringent collateral requirements might be detrimental to the activities of these societies in the long run especially in cases of default which are reportedly not uncommon among this population of traders.

Microfinance banks were the least used by the respondents, even though they are easily accessible around the marketplace. Major issues with the patronage of microfinance banks as reported by the traders is the high interest rate, as well as their strict handling of loan defaulters. This low patronage of microfinance banks is quite surprising considering the fact that microfinance banks were established in order to achieve financial inclusion due to the inability of commercial banks to serve the needs of MSMEs and low-income households (Nwanyanwu, 2011). Perhaps this stringent requirements by microfinance banks is not unconnected with the fact that many microfinance banks continue to face problems ranging from loan default by borrowers, as well as fraudulent practices by some bank staff, and these have led to the revocation of licences of many microfinance banks. For example, in 2018 alone, the licences of 154 microfinance banks were revoked by the Central Bank of Nigeria (Jannah, 2018).

A key challenge to information seeking on loan procurement by the traders is the reported lack of uniformity in the information received from loan agents when they visit the traders at their shops and when the traders eventually visit the offices of the loan agents in order to process the loan facility. Most likely, this inconsistency in information given, as well

as other challenges to obtaining loan facilities, such as high interest rates and excessive collaterals make the cooperative societies the choice for most of the textile traders.

Conclusion and Recommendations

This study has explored the information behaviour on loan procurement by textile traders in Nigeria. Specifically, the study has made key contribution to knowledge by showing that information needs of textile traders on loan procurement are about access to loans with low interest rates and bearable mode of repayment. It has also revealed that face-to-face communication with loan agents is the most preferred source of information on loan procurement by the traders. Moreover, cooperative societies are the most patronised for loan facilities by the traders. Also, textile traders face the challenge of lack of uniformity in information presented by loan sources through different means. Based on findings from this study, the following recommendations are made.

1. Loan sources need to ensure that loan agents sent to traders are knowledgeable enough to be trusted to provide the right information on loan procurement and efficiently represent their organizations.

2. The fact that most traders prefer face-to-face communication with loan sources has exposed the need for these sources to improve other channels of communication and ensure information provided on these channels are harmonised. Face-to-face communication although reliable should not be the main source of information on loan procurement especially in view of the development in information and communication technologies. Textile traders should be able to receive and use reliable information on loan procurement wherever they might be without having to stay at their shops or visit loan offices.

3. Findings from this study show that textile traders prefer cooperative societies to other loan sources. This is a wake-up call to the Federal Government of Nigeria to review the activities of the Microfinance institutions which were specifically set up to cater for the financial needs of MSMEs. The fact that they were the

least preferred might be an indication of a failure in the policy establishing them, or raises the need to review their operational strategies.

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Implementation of Grassroots E-Government Services in South Africa: A Literature Analysis

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Abstract

This paper examines the implementation of grassroots e-government services in South Africa posing the questions: How are e-government services situated in South Africa's governance framework. In what ways can grassroots e-government services be benchmarked, and to what extent are grassroots e-government services implemented in South Africa? The literature reveals that South Africa's institutional governance framework positions local government as key to achieving better public service delivery and transformation at local and community levels and through early adoption placed information and communications technology (ICT) in its governance operations. With regard to ways with which to benchmark e-government, it was identified that the e-government research area is broad and complex, making it difficult to study exhaustively across all its dimensions with a multiplicity of accepted metrics on the main quantitative negating other non-technical dimensions applicable at any level of implementation. It was evident that the implementation of grassroots e-government services is ad-hoc, only just emerging and becoming more visible particularly on the supply side level. However, service customisation for relevance lags significantly. Given the intricate synergy between e-government and service delivery, the provision of grassroots e-government services would empower citizens' democratic participation in governance, broaden ownership and ultimately lead to e-democracy through increased e-participation.

The implications for theory and practice of this study include that there is continued theoretical and practical interest generated by the e-government concept. Scholars of diverse disciplines interrogate various aspects of e-government while practitioners seek for ways to improve its implementation. Even as e-government research at the grassroots has grown, critics point that empirical studies to inform policy are limited. There is also an acute need to build a theoretical base on the customisation of e-government for relevance to needs at the local grassroots levels to inform subject understanding and consequently practice.

Keywords: *E-Government; E-Government Services, E-government-grassroots Levels; South Africa.*

Introduction

Incorporating ICTs in public service known as e-government is no longer a novelty but an essential aspect of the modern day government enterprise (Glyptis *et al,* 2020; Twizeyimana and Andersson, 2019). As stated by Janssen *et al,* (2011) "[i]n the digital era public organisations are changing their strategies, structures, processes and IT-infrastructure to fully benefit from the promises of information and communication technology". In the same vein, Mawela, Ochara, and Twinomurinzi (2017) reckon "[i]n the public sector, ICT investment primarily manifests itself as Electronic Government (eGovernment) programmes."

By better leveraging ICTs, governments

including those in developing economies implement *e*-government for among many reasons to attain efficiency and cost effectiveness in administration and at a broader level enhance efficiency in public service delivery (Meiyantia, *et al,* 2018; Susanto, 2015). The successes and failures in *e*-government projects implementation in developing economies are widely reported (Gunawong and Gao, 2017).

Problem statement

It can be argued that there is an existing blueprint for 'how to' implement *e*-government and 'how far' *e*-government has been implemented around the world. For many years, research focused on portraying development at the supra national levels. However, in conformity with a shift in global public service delivery practice, focus has swung to the grassroots (Chen and Kim, 2019; Mawela, Ochara, and Twinomurinzi, 2017). Grassroots refer to "… governments that are not central or national but are state, provincial, regional, municipal, or city governments" (Zahran, *et al,* 2015). Early adoption of and stronger policy ingenuity spurred South Africa to take a leading role in e-government both in the Southern Africa Development Community (SADC) region and in the African continent. South Africa today has a stronger e-government policy position and recognisable implementation, however, a scarcity of empirical studies means little is known about grassroots e-government services. In addition, there is minimal discourse examining e-government customisation to meet the requirements of users at the grassroots levels. This study is premised on the following standpoints:

- How are *e*-government services situated in South Africa's governance framework?

- In what ways can grassroots e-government services be benchmarked?

- To what extent are grassroots e-government services implemented in South Africa?

Research Methodology

This paper examines the implementation of grassroots e-government services in South Africa by means of a review of literature. The literature review as a research methodology "… can serve as

a basis for knowledge development, create guidelines for policy and practice, provide evidence of an effect, and, if well conducted, have the capacity to engender new ideas and directions for a particular field…" (Snyder, 2019). *E*-government is both a theory and practice oriented field, thus necessitating the consultation of scholarly, official and technical literature.

Conceptualising e-government

Applying technology in and/or for government is an old practice, Nevertheless, it is natural for a technology domain to undergo constant and continuous development and changes, which means that while *e*-government was coined in the mid-90s, it is still difficult to characterise today and several terms have been proposed (Sokolova, 2006). With ICTs reaching ubiquity (phenomenal increase in the use and broad acceptance of ICTs in many aspects of everyday life), numerous concepts often beginning with the prefix *'e'* describing anything that is electronic have emerged. The practice of *e*-prefixing technology related terms has been questioned or worse called nonsensical (Cernuzzi, *et al*, 2011; Oliver and Sanders, 2004). Cernuzzi, *et al*, (2011), reckon the promise offered by the advent of the Internet in the 90s led to the blossoming of e- anything although reality later revealed that such a perception of a rich variety of opportunities was an 'inflated bubble'. Another challenge is semantic as the terminology is sometimes written in full 'electronic government', abbreviated 'eGov', hyphenated 'e-gov', certain letters put in caps 'eGov or e-Gov', and so forth (eGov, e-gov) (Löfstedt, 2012; D'agostino *et al.,* 2011). Oliver and Sanders (2004), regard governments' adoption of terms such as 'e-governance', service delivery' and '*e*-democracy' as a necessary 'chaotic parlance' attempting to capture the essence of change that technology has unleashed. Some of the contemporary concepts representing the application of technology in government and for governance are: *e*-services, *e*-government, online government and digital government.

There are two dominant definitional viewpoints to e-government. The first simplistically limits *e*-government to the application of ICTs especially the Internet for governance. This is challenged by a

deeper definitional approach that acknowledges that *e*-government is more than technology adoption including the re-engineering of public policy and administration (Amara, 2019; Almarabeh and AbuAli, 2010). The editorial by Janssen, *et al,* (2011) exemplifies the definitional perspectives acknowledging that "*[e]*-government should be viewed as more than a simple layer put on to existing structures". By the same token, Kearns (2004) calls the perception that *e*-government is merely about delivering government services over the Internet as not only flawed but also narrow for broadly oversimplifying *e*-government's nature and vision. Further, this fails to accommodate and recognise the wide array of governmental activities that are not direct services or technologies other than the Internet portraying that a nicely designed, user-oriented website is sufficient when instead substantial investments in people, tools, policies, and processes are needed as the real work of *e*-government is inside the government itself.

With regard to what *e*-government entails, it is acknowledged that it affords the government enterprise connections/relationships electronically with a variety of stakeholders referred to as interaction domains or delivery models (Mawela, Ochara, and Twinomurinzi, 2017). Some of the most distinguishable relationships/connections are with other forms of government, business, citizens and nonprofit entities, hence, when scholars identify the types of *e*-government, they tend to use the relationships above resulting in what is termed government to government or G2G; government to business or G2B, government to citizens or G2C and government to non- profit organisations or G2N, and so on (Kalbasa *et al.,* 2016; Alshehri and Drew, 2010).

Research and implementation discourse conceptualise *e*-government as consisting of two complementary dimensions namely: the implementation dimension examining the technology, budget, and human resources required and the adoption dimension that studies the design and approach of e-government service delivery for wider user participation and adoption (Joshi and Islam, 2018). Similarly, *e*-government is characterised as looking into either the supply side also called the government's perspective or e-government service availability i.e. those who implement to provide *e*-services and the demand side also called the users' perspective or *e*-government usage by business and households i.e. those who receive and/or use the implemented *e*-services (Bakunzibake, Klein and Islam, 2019). For instance, Bakunzibake, Klein and Islam (2019) suggest that "[i]n an e government service oriented project, the service demand side (e.g. citizens and businesses) and supply side (e.g. government agencies) are the primary stakeholders." Yet again others identify what is termed the back office side or internal administration when transactions and information sharing occurs both within and between governments (G2G) *vis-à-vis* what is termed the front office side or external stakeholders such as G2C and G2B transactions (Azelmad, Nfissi, and Mohamed, 2018; Brown, 2005). Internally, ICTs impact on and reform the government operations, ranging from "creating a networked internal working environment to requirements for new skills in the civil service and new administrative processes" (Brown, 2005). As was acutely argued above, *e*-government essentially has two dimensions and its implementation as diverse scholars confirm thus usually starts by improving internal back administration, then when the relevant systems internally have been set up the other external stakeholder relationships become a priority (Alshehri and Drew, 2010; Brown, 2005). The above perhaps explains why growth/ maturity models are popular in the benchmarking and assessment of e-government that reflect the growth path to often begins with having a webpage providing information about the government (opening hours, location and contact details, description of the government, etc.) progressing to some level of interactivity (bi-directional- communication) such as when forms can be filled and submitted through a webpage, queries made and responses obtained and to an advanced transactional stage when a variety of services are offered remotely without one having to move physically to the government department (Alshehri and Drew, 2010).

Situating E-Government Services in South Africa's Governance Framework

In situating the role of e-government in South Africa's governance framework, scholars credit democratic South Africa for early adoption of a policy position that placed ICT in its governance operations that

recognised providing wide access to government information and services from the constitutional level (Jantjies, 2010; Matavire *et al*, 2010). E-government in South Africa thus can be traced to the early nineties with significant in-roads made by the presidency of Thabo Mbeki which emphasised government's ideology of ensuring that individuals regardless of their circumstances play a meaningful role in decision making and in governance by among other interventions having access to information (Jantjies, 2010). Mbeki's government played a key role in speaking of, consulting on and developing policies on e-government and set up various implementing agencies such as the State Information Technology Agency (SITA) and Government Information Technology Officers Council, GITO Council, Multipurpose Community Centres (MPCCs) (Jantjies, 2010). Another milestone was the adoption of the 'Batho Pele' mantra, which put people first (Jantjies, 2010).Notable policy documents include: the 'Report of the Presidential Review Commission on the Reform and Transformation of the Public Service in South Africa' (1998) which provided recommendations on information management, systems and technology; Electronic Government The Digital Future: A Public Service IT Policy Framework (2001) that prioritised interoperability, security, reduction of duplication, and economies of scale in the implementation strategy; and the a research document entitled the "*e*-Government Gateway Project" produced through a partnership between the Centre for Public Service Innovation (CPSI), Department of Public Service and Administration (DPSA) and SITA, having looked at ways of providing citizens with access to e-government services proposing a 7 model framework and strategy design for *e*-government (Smart service, Smart plug in, M-government, Government online, Centre services, Talk to government, and Computerized counter services) (Nengovhela, 2012; Visser and Twinomurinzi, 2008). Summarily, while SA is amongst the leading African states in the compulsory lawful structure and governance model, infrastructure, and personnel required for *e*-government, comparative to other lower middle income countries its broadband penetration remains poor (Gillwald, Moyo, and Stork, 2012).

The inglorious past and failings of the democratic dispensation have resulted in a South Africa of contrasting fortunes. This contrast is in the unsustainably high levels of unemployment and poverty as well as the unsavory distinction of being the most unequal nation in terms of income inequality internationally, simultaneously with strong links with the global economy (Oluwatayo and Mantsho, 2016: Lomahoza, Brockerhoff and Frye, 2013). The chequered past uniquely influences service delivery and e-government (Jantjies, 2010). Democratic South Africa uses a single system of cooperative government consisting of three tiers at the national, provincial and local level through the supremacy of the constitution "constitutional democracy" (Twenty Year Review South Africa 1994 – 2014). The new single system of cooperative government is described in literature as a 'unitary state' and 'a unitary intergovernmental framework' (Government of South Africa, 2020; Chitiga-Mabugu and Monkam, 2013).

There are challenges associated with the institutional framework of government that South Africa adopted that affect service delivery at the grassroots (Treasury, 2011). The World Bank (2011) obverses that because of the decentralised intergovernmental fiscal framework that allocates funds from national to the provincial governments, based on an equitable share linked to population and poverty and through conditional grants, there is a critical mismatch in terms of resource allocation with lesser resources reaching local government; the service arm of government required to be most in touch with the citizens in comparison to structures above it. The municipal boundary demarcations post 1994 discontinued the distinction in terms of administration between towns and the poor countryside which created a service divide noting instead the strong interlinkages thus placed the entire country under the jurisdiction of local government from small villages to metro cities (Chitiga-Mabugu and Monkam, 2013, Treasury, 2011).

It is evidently clear that South Africa's institutional governance framework positions local government as key to achieving better public service delivery and transformation at local and community levels. There is also the role of global forces which have seen the increased use of ICTs in public service including at sub national levels and the adoption of governance systems that permit the delegation of traditionally national responsibilities to subnational

entities (Lanvin and Lewin, 2006). Lanvin and Lewin (2006) submit that there is an "emerging role of cities (and of subnational entities generally) to become global players—as attractors of foreign investment, competitiveness hubs, and/or platforms for the combination of local and international components of global production and supply chains". ICT innovation broadly and, electronic governance in particular are characteristic of 'global cities' and many cities already rank themselves independently of their nation states in terms of the cost of living and quality of life as well as with regards to the extent of their e-connectedness or communication and transacting using electronic devices and networks popularising nomenclature like digital cities, *e*-cities, Internet cities, or Knowledge Cities (Adams and Newton Reid, 2008). With this emerging role cities are now at the heart of *e*-government implementation both independently and/or collaboratively with national government and the private sector and in so doing, they not only benefit the grassroots but the country as a whole.

Ways with which to Benchmark the Implementation of Grassroots E-Government Services

Comparing two or more institutions or entities using a set of indicators is called benchmarking (Rorissa, Demissie and Pardo, 2011). It is widely recognised that monitoring and comparing the status of *e*-government, requires a set of feasible, relevant and internationally comparable indicators that serve as useful inputs to the formulation of policies and strategies for effective e-government development *(United Nations Economic Commission for Africa, 2014). E*-government benchmarking reviews the comparative performance or offers insights on the state of play between participating nations or agencies and is an essential part of the response to current socio-economic challenges and a crucial step in its improvement cycle (Afyonluoglu and Alkar, 2017; Delivering the European advantage: how European governments can and should benefit from innovative public services, 2014). E-government evaluation is important for discovering the current state of e-government development against objectives set in line with the various strategies and action plans (Morales and Bayona,

2018; Ostašius, and Laukaitis, 2015). In the same vein, Susanto (2015) acknowledges that measuring e-government can offer crucial signposts to point government policy makers in the right direction. It is in this regard that organisations such as the United Nations (UN), World Bank, Information Technology Union (ITU), Organisation for Economic Co-operation and Development (OECD), European Union (EU) among others comparatively assess e-government development on a continuous basis churning out significant literature on this subject (Rorissa, Demissie and Pardo, 2011).

E-government is a complex issue that has political, social, technological, and organisational aspects, monitoring and evaluation each requiring a different set of indicators and measures (Codagnone, and Undheim, 2008). The observations of Graafland-Essers and Ettedgui (2003) are that because the e-government research area is too broad, it is therefore difficult to study exhaustively across all its dimensions and the tendency is to "concentrate on the supply-side of e-government, availability and level of sophistication of online services and usage". The above sentiments concur to the criticisms made about international e-government evaluation which has tended to rely on supply-side benchmarking lacking in rigour through its dependence on web based surveys to get their data (Codagnone, and Undheim, 2008). On the matter of rigour, it is observed that in general e-government studies in developing countries tend to be definitional in approach and rely on secondary data (Burke, 2012). There is also a diversity of terminology that compounds the general understanding to *e*-government evaluation and or benchmarking including such terms as monitoring, ranking, assessment, technique, method, toolkit, etc. Further criticism of *e*-government evaluations point that there are several accepted indicators or metrics and no uniform or complete set of evaluation metrics with different authors using different methodologies and non-comparable results (Morales and Bayona 2018; Rorissa, Demissie and Pardo, 2011). There is also a concern that the multiplicity of metrics used for evaluating e-government are generally quantitative tending to evaluate results of ICT investments using ICT indices and thus negate the other non-technological dimensions to e-government as non ICT indices are often an insignificant exception (Morales and Bayona 2018; Zahran, *et al*., 2015)

creating an impression that e-government is only about ICT.

Sample *e*-government evaluation indices from literature include the, e-readiness index, *e*-participation index, internet penetration, ICT infrastructure and access indices, evaluations of web presence/online presence, evaluations of websites and portals, tele density, e-literacy, digital divide, human development index, among others (United Nations Economic Commission for Africa, 2014; Dzhusupova, *et al.,* 2010). Rorissa, Demissie and Pardo (2011) put forward that the co-indicators [some of which are identified above] collectively form a framework for e-government evaluation.

It should be acknowledged that there is a lack of unanimity in e-government literature as to what theories or models are applicable for benchmarking e-government (Zahran, *et al.,* 2015; Ojo, Janowski, and Estevez, 2011). In this regard, it is observed that in the early days, it was claimed that there is no specific e-government theory owing to disagreements as to what *e*-government really is, a situation that arguably persists to the present day while others argued that e-government theory development is poor and has methodological limitations. Ojo, Janowski, and Estevez, (2011) suggest that there is "a need for a better theoretical and conceptual foundation for benchmarking in general and for EGOV benchmarking in particular". Notwithstanding, the above shortcomings, this paper adopts the view of Zahran, *et al.,* (2015) that identifies that "a framework or a model is a set of concepts, values, metrics, and practices that represent a method of viewing reality" used to derive "suitable indicators for evaluating various e-government initiatives" (Berntzen and Olsen cited in Zahran *et al*., 2015). E-government evaluation or benchmarking is categorised by the aspects (indicators) or objects covered in the model or framework (Zahran, *et al.,* 2015).

In benchmarking e-government, most theories and models tend to focus on technology adoption and/ or its diffusion (growth / maturity) (Janssen, *et al,* 2011) but also there are some *e*- readiness assessments. The key distinction between the two are that the earlier refers to the level attained in terms of e-government progress based on the assessment while the latter looks into the requirements that are necessary for e-government

to be implemented (Ostašius, and Laukaitis, 2015). Growth/maturity models present the evolution and / or sophistication of e-government through sequential steps (Joshi and Islam, 2018; Ostašius, and Laukaitis, 2015). The number of distinct levels, steps or stages varies. The overarching argument is that in general an e-government development path can be discerned wherein the scope increases over the years leading to a larger number of people using its services, technology matures and diversifies, the number of services increase and their quality improves thus many maturity models try to capture this development in terms of distinct "levels" (Mukamurenzi, Grönlund and Islam, 2016). In this regard while in the mid-1990s the focus was on websites, today it is about integration, infrastructure, and open data (Mukamurenzi, Grönlund and Islam, 2016).

Further assessment of literature reveals that a differentiation can be made between models that are applicable for e-government evaluation at the different levels of government such as international, national and local government (Zahran, *et al.,* 2015).

The Extent of Grassroot E-Government Services Implementation in South Africa

To fully appreciate the extent to which grassroots *e*-government services have been implemented in South Africa, it is important to first paint briefly the picture of the state of play from the supra national levels and cascade down. E-government development echoes the global development interplay that contrasts world economies in terms of patterns and gaps between and among countries thereby distinguishing between developed (DCs) of the industrialized "West" or "North" and the least developed countries (LDCs) of the "South" (Caddell and Hall, 2005) and "developed economies, economies in transition and developing economies" *(United Nations World Economic Situation and Prospects, 2019).*Ordinarily the most economically advanced states rank top for having the most advanced e-government with upper and upper-middle income countries somewhere in the middle and the least developed economies at the bottom (ICT Facts and Figures, 2017; United Nations Department of Economic and Social Affairs, 2016).

Many countries in Africa and in the emerging markets of Asia and Latin America have experienced

substantial growth and dramatic expansion in mobile penetration and soaring Internet use and broadband access this as the mature markets reach saturation, and in part through the ability offered by the Internet to circumvent older technology and infrastructure and thus be online without the necessary backbone (The world in 2010 ICT Facts and Figures, 2010).

Evaluations of SA's e-government conclude that a variety of services are offered yet few or close to no government department offers services beyond interact level (Nengovhela, 2012; Ngulube, 2007). Likewise, Mtimunye (2009) came to the conclusion that while the face and character of the ICT landscape in SA had radically altered creating a nation described as perched between performance and promise, e-government's full potential was yet to be realised. A damning claim is that "research indicates that ICT has historically been viewed as a secondary operational function within municipalities in South Africa" (The Smarter Cities of the Future White Paper: ICT Innovation and Adaptation, 2017). Similar evaluations are plentiful.

On the positive side, *e*-government is recognisable at various levels of government in South Africa (almost all government departments and agencies have their own website mostly informational e.g. the e-Natis system, national population register, deeds register), the installation of public information terminals around the country (MPCCs/ Thusong centres) for Internet and email access in certain rural centres and the funding of computer centres in rural communities with, some level of transactional services and/ or websites such as the electronic processing of grant applications from remote sites and SARS e-filing (Mphidi, 2008). South Africa also boasts extensive rural electrification, shorter distances between a multitude of towns (development nodes) in comparison to its counterparts on the continent and by now a mobile market already saturated or reaching saturation.

The Provincial Government of the Western Cape: Cape Gateway Project Evaluation (2003) alludes that "numerous e-government and portal initiatives are at varying stages of formulation and implementation". Some identified examples of portals are the Cape gateway and Gauteng gateway whilst at the strategy level one can point to the: (Gauteng Department of e-Government Strategic Plan2020-2025; Western Cape: draft e-Government Strategy 2012-2019; Provincial Government of the Western Cape (WC), Cape Gateway Project Evaluation, 2003). The WC provincial government are pioneers in e-government in South Africa some of their efforts traced as far back as 2001 (Evaluation of the Cape Gateway Project, 2003). Gauteng has gone as far as establishing a department of e-government required to set up the core network infrastructure. Critically, the Gauteng government **realised that to implement** *e*-services they need to digitise back-offices and to re-engineer business processes as well as create and run a digitised document management system (Gauteng Department of E-government, 2017). Maumbe, Owei and Alexander (2008) conclude that undoubtedly, the Western Cape's e-government programme is well ahead of other provinces in South Africa, some like the Eastern Cape were at that time still struggling to set up their first e-government initiatives.

Conclusion

E-government implementation and general service delivery are invariably tied to the intricate links between the three tiers of government. The resultant challenge is that national government, the highest structure of government although far removed from the majority of the citizens is better resourced than the provincial and importantly the municipal government system at the grassroots; the action unit of government in terms of service delivery. Owing to the above observation in South Africa national government has been the key driver to e-government and that needs to change. Advocated for is a strategic shift in focus to local government municipalities the sphere of government in touch with the masses. At the municipal level, the picture is less clear.

The South African government has made commendable strides from the dawn of democracy in *e*-government development albeit considerable challenges remain in particular at the grassroots level. Examining grassroots *e*-government service implementation in South Africa through a review of literature above revealed that there is visibility in terms of the supply side of e-government, however, the demand side to e-government is still very unsatisfactory and customisation lags significantly.

There are implications for theory and practice associated with this examination of the

implementation of grassroots e-government services in South Africa. As a theoretical concept, e-government continues to generate interest and remains a focus area of scholars from diverse disciplinary affiliations. In the various echelons of government around the world, practitioners such as government technical experts and bureaucrats also continually seek for ways to improve e-government implementation. While there has been growth of research that focuses on e-government at the grassroots in developing countries, critics point that empirical studies to inform policy are limited instead the common tendency is to rely on sweeping national statistics. It is also critical to build a theoretical base on the customisation of e-government for informing subject understanding and as a consequence influence practice. There is a scarcity of e-government research that focuses on the customisation of e-government services in general and at the grassroots in developing countries including in South Africa.

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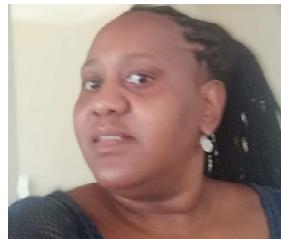
Continuing Professional Development and Institutional Support for Academic Librarians in Botswana

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Abstract

Among other benefits, continuing professional development (CPD) is an adventure to keep current with developments in the profession and be reskilled for challenges that may rear up in the industry. The objectives of the study were to ascertain the kinds of CPD activities that academic librarians in Botswana are involved in; examine different ways in which academic institutions support CPD activities; investigate the perceived impact of CPD activities and challenges faced by the academic librarians in their endeavor to keep abreast with developments in the profession. A survey design with a questionnaire was used to assess continuing professional development (CPD) and institutional support amongst academic librarians in both public and private tertiary institutions in Botswana. A total of 188 copies of the questionnaire were distributed, 116 copies were returned. Responses point to an environment with minimal management support for CPD. The findings revealed that academic librarians mainly participate in conferences (52.9%), workshops and in-house training. There is very limited external training. A total of 43 (37%) respondents stated that their employers support them in terms of 'paid time to attend' to attend training or conferences. This means that respondents are paid their usual salary while attending training. Twenty-nine (25%) respondents stated that they received support in terms of travel expenses being paid by the employer. Whilst librarians decry a lack of mentoring and funding for CPD, management is of the view that the staff did not make the best use of CPD opportunities availed to them. The paper provide some useful recommendations.

Introduction

Continuing Professional Development (CPD) can be viewed as a lifelong process of active participation by professionals in learning activities. It can be offered in order for staff to acquire new skills that are needed for a particular workplace, and to keep abreast with workplace developments or changes in job descriptions. According to Maesaroh and Genoni (2010), CPD is of importance in developing countries because of rapid workplace change due to higher rate of uptake of new technologies and the need to close the development and technology gap. Maesaroh and Genoni (2010) also argued that the developing concept of "professionalism" as library and information workers view their occupation as a career rather than a job portend CPD as significant.

CPD is essential for developing and maintaining continuing competence, enhancing professional practice and supporting achievement of career goals. CPD therefore can be viewed as a further study undertaken during employment by a trained librarian sometimes at the initiative of the employer or on a voluntary basis. It benefits both the employees and the organisations in various ways in the bid to attain organisational goals. CPD is important in the sense that it prepares librarians for new developments and challenges that may befall the organisations and end

users they support.

In view of the fact that higher education institutions (HEIs) play an important role in the socio-economic development of their country by producing doctors, engineers, lawyers, religious scholars and economists to serve the country through greater knowledge creation and implementation (Blass and Hayword, 2014), they are expected to be alive to global developments. Libraries in these institutions, otherwise known as academic libraries, especially in developing countries like Botswana make significant contribution to attaining the goals of the parent institutions. Unfortunately, most, if not all, of these libraries face the challenge of planning for CPD in terms of development of policy and budget allocation. The foregoing will usher in an environment where by the CPD is implemented in a planned approach as opposed to informal tactic. Anwar and Al-Ansari (2002) investigated the continuing professional development practices of 15 publicly funded academic libraries in the Gulf States. They reported that there was a "general lack of a systematic programme for CPD in the participating libraries to the extent that 12 of the 13 libraries do not have a written staff development policy" .The presence of CPD policy is an indication of the institution's commitment to continuing staff development. The need for planning for CPD by higher education institutions, including their libraries cannot therefore be over emphasised.

Lamptey and Corletey (2011) see CPD as the means by which members of professional associations maintain, improve and broaden their knowledge and skills and develop the personal qualities required in their professional lives. By participating in the programmes and activities of the professional association, one is taking a conscious step in updating professional knowledge and improving professional competencies in their working lifetime. As one participates in the CPD scheme or plan, one is showing a commitment to his professional growth and the need for the individual librarians to upskill themselves of new development. Keeping one's professional skills up to date and being abreast of new and changing technologies not only benefits professionals, but also gives the employer a staff member with expansive skills and experience (Broady-Preston 2009).

The Problem

Investment in learning and development for academic librarians has a positive impact on the academic institutions, the learners, the teaching staff and the quality of services rendered. One view is that the responsibility for CPD lies with the professional association (Wood, 1999). Another view is that the organisation for which the academic librarians works for must take the responsibility for CPD. A third view is that the academic librarians themselves must individually take responsibility for CPD (Blair 2000) and the last view pushes for a co-operation between the different stakeholders in the pursuit of CPD. The sentiment that librarians need to be encouraged to enhance their educational and professional qualifications is shared by Kont and Jantson (2015).

It appears it is not smooth sailing for respondents. At the individual level, the key factors appear to be awareness and understanding of CPD, conûicting demands on time, the availability of funding, and access to CPD resources (Hemmington, 2000; Corcoran and McGuinness, 2014;; Moonsar and Underwood, 2018). At the level of the organisation, CPD is affected by organisational strategy and the commitment of top management.

The study therefore sought to investigate whether the academic librarians in Botswana are in an enabling environment that would lend itself easily to CPD and workplace learning. Furthermore, the study also attempts to ascertain librarians' individual role in participating in CPD initiatives.

Objectives

The study aimed to:

1. Ascertain the kinds of continuing professional development activities that academic librarians in Botswana are involved in

2. Examine different ways in which academic institutions support academic librarians in Botswana

3. Investigate the perceived impact of the provided continuing professional development activities by academic librarians

4. Establish Challenges faced by the academic

librarians in their endeavour to keep abreast with developments in their profession.

Literature Review

Continuing professional development activities vary across organisations. This is because institutions tend to participate in activities that are considered to be within their mandate and are essential to them (Alawadhi, 2015). Continuing professional development activities can probably be perceived in formal and informal activities. Formal activities include publications of papers, taking of formal courses, attending meetings, conferences and having professional talks. On the other hand, informal activities include networking, reading online information, online communication and group discussions (München, 2005). Similar to the above perception, Namaganda, (2019 opines that there are traditional and non-traditional CPD activities. In his study in Uganda public libraries, evidence shows that librarians participated in traditional activities such as workshops and conferences which are the most dominant. Others participated in non-traditional activities such as taking online courses, and self-paced learning (Namaganda, 2018). He criticises the reluctance of librarians in taking up technology related training.

Saliu, Igiamah and Hamsetu, (2014) found out that most library professionals in Nigeria participate in CPD activities, reporting over 90% of professionals participating in conferences and workshops. Other activities they participate in include networking (21%), group meetings (35%) and mentoring (21%). Similar results are also reflected through a survey of Uganda public libraries by Namaganda, (2019) who agrees that professionals participate in workshops and conferences in large numbers compared to all other activities.

Furthermore Aslam (2019) also shares that professionals participate in CPD activities through social networking platforms such as Facebook, Twitter and Instagram. It is through these platforms that professionals meet each other and in the process exchange knowledge and skills aligned to their professions. These findings are consistent with Chang and Hosein, (2019) who claim that participation in CPD activities is much easier because technology has made it interesting and easy.

Be that as it may, the literature has documented cases in which librarians do not fully participate in CPD activities despite having said that management is supportive of CPD. For instance, in the study undertaken at the Durban University by Moonsar and Underwoord (2018), it was interestingly observed that 50% of the respondents felt that CPD should be enforced in order for librarians to keep up-to-date within their profession. A study undertaken in Kuwait by Alawadhi (2015) criticised professionals who have not been able to take advantage of the available CPD activities. This was against 60% of professionals who attended CPD activities such as specialised conferences, workshops, short courses and networking with peers. Mentoring is considered a crucial CPD activity that professionals participate in. In their study, Ritchie and Genomi (1999), describe mentorship as a tool or instrument that can be used to achieve desirable benefits. This is in line with Chang and Hosein, (2019) who, in their findings, also identified mentorship as an important CPD activity that academic libraries take seriously.

Compared to years ago and before the devastating effect of COVID-19 pandemic, it is more important now than ever for academic librarians to align their skills with technology innovations. Higher Education Institutions world-wide are on the impetus to offer programmes online and teach remotely. Academic libraries seem to have no choice but to move with their respective institutions. Extant literature reveals that librarians and information professionals acquire and gain new skill sets through participation in CPD activities. CPD widens the scope of professional activities in institutions as employees acquire new skill sets. This is also reflected in a survey by Alawadhi, (2015) who contends that CPD makes it easier for professionals to get a better understanding of issues from the field. He affirms that academic libraries that participate in CPD activities are likely to perform their functions effectively, asserting that they can easily locate information and respond to users' queries because they have the knowledge acquired through CPD activities (Alawadhi, 2015).

A survey by Venturella and Breland (2019) established that CPD improves personal growth in an institution. This is possible as acquiring new skills means that a professional grows in terms of skill sets. Munchen (2007) agrees that through CPD, personal

growth can be achieved, and that CPD produces a new generation of leaders as professionals are able to develop through these activities. On the other hand Cossham (2007) claims that CPD can motivate professionals in an organisation and in the process improve their self-esteem and confidence which are important in the information profession. A survey by Chang and Hosein (2019) to explore CPD in an academic library speculates that organisations which actively participate in CPD activities have desirable benefits for the organisation as well as the professionals themselves. These benefits include, building self-confidence, achievement of career goals, improving employability, self-development as well as enhancing skill sets. These findings are consistent with the findings of Venturella and Breland (2019), Cossham (2011) and Munchen (2007).

Adanu (2007) also admits that participation in CPD activities is a key enabler of career development, competency as well as improved job satisfaction. These benefits are reflected in his study among professional libraries in five state-owned universities in Ghana. The study revealed that a majority of professionals had improved job performance because of the newly acquired skills, highlighting that the above benefits are the main reason they participate in CPD activities. These findings are supported by Ukachi and Onuoha, (2013) who agree that CPD participation is important in acquiring new skills such as networking skills and information searching skills.

It is crucial that employers recognise the benefits of CPD to their employees and for the overall performance of the organisation. It is worth mentioning that the success of CPD can only be achieved with organisational or institutional support. Through institutional support, employees are able to participate and thrive in CPD activities. In a survey by Cossham and Fields (2007) it was established that employees participate in CPD activities through encouragement and support they receive from the employer. The survey reported that over 70% of employees received support in form of paid time and sponsorship for courses. Alawadhi (2015) also admitted that staff members are supported by giving them time off work functions so that they can participate in CPD activities such as workshops and seminars for free.

Institutions such as libraries often have positive

intentions when it comes to CPD activities. This is underscored in a survey of Nigerian libraries by Adanu (2007). The survey findings indicated that the library environment was supportive to a greater extent of CPD. He emphasises that participation in CPD activities is a collective task which requires both employees and employers to be actively involved. The survey indicates that employees receive book allowances and others are given the opportunity to be allowed a paid study leave, conference sponsorships and free subscriptions to professional bodies. Adanu's (2007) findings also revealed that there is informal and unofficial support which include the use of library resources such as stationery and computers. All these form part of the libraries support towards CPD activities.

Despite the numerous benefits of CPD activities, a number of extant literature reveals that information professionals cannot participate in CPD activities as a result of multiple contributing factors. A study by Robinson (2019) in Jamaica indicated that over 65% of employees do not have adequate funding to engage in CPD activities. This challenge is also reflected in other related studies (Namaganda (2019); Moonasar and Underwood 2018; Saliu, Igiamah and Hamsetu, 2014). These studies concur that CPD activities cannot be implemented when funds are not available. In some cases, Saliu, Igiamah and Hamsetu (2014), argue that libraries end up selecting a few professionals to participate in CPD activities as a way to meet the budget. Additionally, the study suggested that lack of funds brings about other challenges such as favoritism which measured 27% among library professionals. Respondents were of the view that some professionals end up being selected over others to participate in CPD activities. In South Africa, a survey that explored CPD at the Durban University of Technology, indicated that five professions cannot participate in their professional associations due to high costs of membership registration. Hence, they cannot receive any professional advice and knowledge from the association (Moonasar and Underwood, 2018).

Maesarah and Genoni, (2010) also agree that financial constraints are a problem in academic libraries because CPD activities are often given less priority. In a survey of libraries in Indonesia, it was found that seven libraries did not have a budget allocation for training, hence, affecting their

involvement and participation in CPD activities. Moonasar and Underwood (2018) further highlights that CPD activities fees are high making it difficult for most librarians, especially in developing countries to participate because limited budgets cannot accommodate them. Moreover, the survey revealed that over 40% of libraries do not have a staff development plan that is inclusive of CPD activities.

On the other hand, Chang and Hosein, (2019) recognise lack of time, lack of knowledge of CPD opportunities, absence of rewards and family commitments as barriers that affect CPD activities. In their study in Trinidad and Tobago academic libraries, they mention that organisations need to start implementing time management strategies for improved CPD participation. Some of their findings concur with a similar study by Namaganda, (2019) in Uganda. Findings revealed that CPD participation is affected by lack of organisational support, lack of time, limited CPD activities, lack of motivation and lack of a staff development policy (Namaganda, 2019). Namaganda argues that these challenges are common in most countries. Another study in Nigerian libraries by Saliu, Igiamah and Hamsetu (2014), indicates that between 58% and 66% employees lack the support of the institution and motivation to participate in continuing professional development activities. Similarly, most studies argue that employees often find it difficult to keep a balance between their daily work and involvement in CPD activities. This then means they begin to prioritise their jobs rather than engaging in CPD activities. Hence, this justifies their limited participation in CPD activities.

Methodology

The study adopted a positivist paradigm and survey research design. A structured questionnaire was used to collect data, where survey questions were developed based on existing, tested and verified instruments (Dulle and Minishi-Majanja, 2011). NeXus1 and neXus2 survey questionnaires developed in Australia by Hallam (2008) under the auspices of the Australian Library and Information Association were adopted for this study after permission was granted. The survey questionnaire had also been used by Maesaroh (2012) in a similar study in Indonesia. It largely consisted of closed-ended questions formed on a five-point Likert scale to measure the level of agreement and disagreement of the respondents and was self-administered and also distributed by e-mail to the academic librarians in Botswana. The sampling method used was census. The Statistical Package for the Social Sciences Version IBM 24 was used for data analysis. The data collected for the study were collated and analysed using descriptive statistics of frequency counts, percentages, mean and standard deviation (SD). Furthermore, interviews were held with the heads of five libraries. The responses from the interviews have been analysed thematically to bring out their views on continuing professional development.

Findings

Demographic Information

A total of 188 copies of the questionnaire were distributed, 116 copies were returned, which provided a 61.7 percent response rate. The participating libraries, number of copies of the questionnaire administered (being the first number in the parenthesis), number of copies returned (being the second number in the parenthesis), are as reflected below. The participating libraries comprised of all the four public university libraries, including, University of Botswana (102, 52), Botswana University of Agriculture and Natural Resources (17, 8), Botswana International University of Science and Technology (16, 12) and Botswana Open University (6, 4); three degree awarding private institutions comprising Ba Isago University (2, 2), ABM University College (3, 3) and Botho University (4, 3); two other public degree awarding institutions including Botswana Accountancy College (6, 5), and Institute of Development Management (7, 6). Others include three Colleges of Education in Molepolole (3, 2), Tlokweng (5, 5) and Serowe (2, 1); five Institutes of Health Sciences in Gaborone (3, 2), Kanye (2, 2), Francistown (4, 3), Molepolole (2, 2) and Serowe (2, 2); as well as one degree awarding Vocational Technical College in Francistown (2, 2).

Out of the 116 respondents, 76 (65.5%) were females, 36 (31%) were males while 4 (3.5%) respondents did not indicate their gender. Interviews were conducted with five head librarians of the institutions, teaching department and professional association. The interviewees hold varying qualifications from Master in Library and Information Studies to Doctor of Philosophy.

Table 1: Distribution of Respondents by age range

Age range (years)	Frequently	Percentage
21-25 years	3	2.6
26-35 years	38	33.3
36-45 years	28	24.6
46-55 years	33	29
56-65 years	11	9.6
66 years and above	1	0.9
Missing	2	1.7
Total	116	

The mode for the age of the academic librarians' is the 26-35 years age range. This range holds 38 or (33.3%) of the respondents. This age range is followed by 36-45 years category with 28 or 24.6% respondents. Only 11 (9.6%) fall within the 56 -65 years range. It appears the profession is attracting more young people to work in the academic libraries than the elderly. This is very good for the growth of the profession.

Work Experience

The participants were asked to state their library work experience. The responses have been captured in Table 2.

Table 2: Distribution of the Work Experience

Work Experience (years)	Frequency	Percent
1-5 years	25	22.3
6-10 years	24	21.4
11-15 years	18	16.1
16-20 years	12	10.7
21-25 years	11	9.8
26 years and above	22	19.6

The above Table indicates that most of the librarians are new entrants to the profession. Most of the respondents were in the category of 1-5 years in terms of their on-the-job experience. Those who hold above 20 years' experience constitute about 29.4% of the total number of the respondents. Other details are as indicated in Table 2.

Educational Background

In terms of the educational background, the distribution is as shown in Table 3 with Bachelor in Library Studies or Bachelor of Arts in Library and Information Studies degree holders in the lead and only one with a PhD degree coming last in the Table 3: Distribution of Respondents by Qualification.

Current Highest Qualification	Frequency	Percentage
Certificate	5	4.8
Diploma	28	26.7
BLS/BALIS	41	39.0
MLIS	30	28.6
PhD	1	1.0

Academic librarians were asked to state the highest qualification they had attained regardless of discipline. Most of the respondents (n=41, 39%) had a bachelor's degree in Library and Information Studies followed by 30 (28.6%) who had a Master in Library and Information Studies. The least attained qualifications were Certificate in Library and Information Studies and Doctor of Philosophy with 5(4.85) and 1(1%) respectively. The data suggests that most of the academic librarians had professional qualifications.

Distribution according to Discipline

The respondents were further asked to state the discipline in which they attained their undergraduate qualification. This question was asked to assess the multidisciplinarity of academic librarians.

Table 4: Distribution of Respondents by Discipline

Discipline	Frequency	Percentage
LIS	81	75.9
Law	3	2.8
Education	1	0.9
Arts	5	4.6
Science	1	0.9
Business	3	2.8
Information Technology	6	5.6
Other	7	6.5

The above suggests that most of the academic librarians obtained a Library and Information Studies qualification. It also suggests that there is interest in joining the profession from other disciplines such as Information Technology, 6 (5.6%), the Arts 5 (4.6%) and Law 3(2.8%).

Respondents were further asked to indicate if they were currently involved in formal education. Majority of the respondents 66 (58.9%) said they were not currently involved in continuing their education while 46 (41.1%) stated that they were still involved in an education programme. None of those who were currently studying enrolled in a Master in Library and Information studies. The respondents mainly enrolled in various non-LIS Masters Programmes (Business Administration (10.9%); Public Policy (2.2%); Master of Archives and Records Management (26.1%). The findings seem to suggest that MLIS is no longer attractive among academic librarians who were still interested in further studies. It is possible that the respondents who previously have LIS qualification, are currently undertaking non-LIS programmes are in search of opportunities to use a higher qualification as a means of getting a new employment.

Continuing Professional Development of Academic Librarians

In line with the first objective of study, the purpose of this section was to establish different kinds of continuing development activities which academic librarians take the initiative to be active players in. Respondents were asked whether they had attended any professional association meetings. Out of the 114 responses, 108 respondents answered this question. Fifty-six (51.8 %) responded in the affirmative while 52 (48.2%) stated that they had never attended a professional association meeting.

Table 5: Attendance at professional development activities

CPD Activity	Frequency	Percent
Conference	54	52.9
Seminar	5	4.9
Workshop	22	21.6
External training	3	2.9
Workplace training	12	11.8
Self-placed learning through audio, video, CD, TV.	3	2.9
Mentoring	2	2.0
Total	102	100.0

In order to further understand the professional activities of academic librarians, participants were asked to state the kinds of literature they used to stay current with professional developments. Participants were provided with four options (journals, blogs, magazines, professional conferences and webcasts) and were asked to indicate as many options as may apply. Those who used journal and magazine articles were 73 (62.9 per cent). Use of blogs attracted 43 (37.1 percent) respondents and attendance of professional conferences came up with 42 (36.2 percent) respondents, while 29 (25.0 per cent) indicated they resorted to webcast or virtual conferences. Those who opted for other literature not included in the list, constituted only 3 (2.6 percent) of the respondents.

A follow-up question was posed to respondents to state why they felt the need to keep up with professional literature. Four possible options were provided as captured in Table 6, and respondents could choose as many as may apply. They were also allowed to supply any additional reasons for the need to keep up with professional literature. The respondents chose three of the four options.

Table 6: Distribution of respondents on keeping up with professional literature?

Reason for need to keep up with professional literature?	Frequency	Percent
Promotion requirements	10	8.62
Stay current with developments the profession	104	89.66
To get publication ideas	17	14.66
I don't feel the need	0	0.00
Other	1	0.86

The need to stay current with developments in the profession was given the highest premium and, or most common reason for reading the literature by the majority of the respondents. A total of 104 (89.6%) respondents indicated keeping abreast with occurrences and happenings in the profession in terms of research and any new developments. Coming a distant second was a group of 17 (14.7%) respondents who stated that they read professional literature with a view to getting ideas to support their own writing and publishing. The next category of respondents were those who indicated that they read professional literature in order to meet promotion requirements. None of the respondents stated that they did not feel the need to read professional literature. The responses to this particular item of

the questionnaire is worth noting because the respondents support the teaching and learning in their respective institutions and to be at the cutting edge of developments in their career is commendable. As academic librarians they also need to contribute to knowledge through research and publications which appear to be scant, if not lacking or nonexistent.

In spite of the positive and encouraging responses documented above, the respondents were asked to state some of the obstacles that came their way in keeping current with developments in the profession through the reading of professional literature. The responses are as captured in Table 7.

Table 7: Factors limiting the respondents to keep up with professional literature and developments in the profession

Limiting factor	N	Percent
No enough time to locate & read relevant literature	71	61.2
Do not have access to relevant literature	13	11.2
Overwhelmed by the amount of information available	29	25.0
Professional literature is not relevant to my job	3	2.6
Total	116	100

According to Table 7, respondents did not seem to find time to locate and read literature (71; 61.2%), trailing behind are 29 (25%) who indicated that they were overwhelmed by the amount of available literature. Only 13 (11.2%) respondents stated that they did not have access to relevant literature and lastly, 3 (2.6%) were of the view that 'professional literature is not relevant to my job'.

Employers' Involvement in Professional Development Activities

In examining the second objective of the study, the researchers sought to ascertain the extent to which employers were involved in the continuing professional development of the academic librarians. Specifically, respondents were asked the kinds of support that the academic institutions accorded them. Respondents were further asked whether the employer subsided or reimbursed any portion of the cost associated with attendance at the professional association meetings.

Table 8: CPD support received from Employer

Support offered by employer	Frequency	Percentage
Paid time to attend	43	55.8
Travel	29	37.7
Accomodation	2	2.6
Registration costs/fees	3	3.9

Table 8 depicts the kinds of formal institutional support for professional development activities of academic librarians. A total of 43 (55.8%) respondents stated that their employers supported them in terms of 'paid time to attend'. This means that respondents are paid their usual salary while attending training. Twenty-nine (37.7%) respondents stated that they received support in terms of travel expenses being paid by the employer. Only 3 (3.9%) respondents indicated their employers paid their registration fees while just 2 (2.6%) stated their accommodation was paid for. Going by the responses provided, it appears academic institutions did not offer much support in terms of accommodation and registration fees since only 5 respondents responded in the affirmative.

Perceived Impact of Professional Development Activities by Academic Librarians

The third objective of the study was to elicit information on the perceived impact of professional development of the staff. In this regard, participants were asked to indicate the perceived impact of the on-the-job or workplace training from the options provided in Table 9. The essence of the question was to ascertain whether the workplace activities had improved their performance on the job in the last five years.. The options provided against the types or formats of training were "to no extent", "to some extent", to a great extent" and "have never participated". Respondents were asked to indicate as many options as may apply.

Table 9: Perceived impact of workplace training/learning activities

Type/format of training	To no extent	To some extent	To a great extent	Have never participated	Total
Job-oriented skills training (excluding tech.)	9 (8.41%)	48 (44.86%)	29 (27.1%)	21 (19.63%)	107
Technology skills training	15 (14.15)	44 (41.51)	23 (21.70)	24 (22.64)	106
Customer-service related training	11 (10.19)	34 (31.48)	31 (28.70)	32 (29.63)	108
Management training	25 (23.58)	34 (32.08)	17 (16.04)	30 (28.30)	106
Mentoring	36 (33.64)	35 (32.71)	7 (6.54)	29 (27.10)	107
Job rotation	38 (35.85)	22 (20.75)	12 (11.32)	34 (32.08)	106
Job swap	51 (49.51)	10 (9.71)	5 (4.85)	37 (35.92)	103
Job sharing	26 (25.00)	29 (27.88)	13 (12.50)	36 (34.62)	104

Most of the participants attempted this question. The total responses for each workplace professional development activity ranged between 103 and 107 out of the 116 participants who returned the questionnaire. Workplace job-oriented skills training other than technology skills, attracted the highest number of positive responses. A total of 77 (72%) out of 107 participants, stated that workplace job-oriented skills either impacted their job performance "to a great extent" or "to some extent". Only 9 respondents claimed "to no extent". In other words, job oriented skills training had not given any impact to only 9 respondents. Surprisingly, 21(19%) participants had not undertaken any workplace training in the last five years. In terms of technology skills training, 67 (63.2%) respondents believed it improved their performance on the job. This is supported by 23 (21.2%) who chose "to a great extent" followed by 44 (41.5%) who said technology skills training improved their job performance "to some extent".

Job swap, job rotation and job sharing attracted the most negative responses. A total of 51 (49.5%) respondents, in spite of being given an opportunity on job swap, indicated minimal or no impact on the job performance. This constitutes almost half of the participants. Thirty-seven respondents (35.9%) stated that they had not participated in job swap. Only 5 (4.9%) respondents stated that job swap had a great impact on their job performance while 10 (9.7%) stated it impacted on them only 'to some extent.'

Job rotation was one activity which attracted a lot of negative responses. Out of the 106 responses, 77 participants indicated they neither participated in job swap nor perceived the impact on the performance of the participants. Twelve respondents believed that job rotation had a great impact on their job performance while 22 stated "to some extent'.

About two-thirds (67; 60.7%) of the participants stated that they had "never participated" in a mentoring programme or perceived impact on the job performance of those who were enrolled. Only 7 out of 106 participants indicated that mentoring impacted their job performance "to a great extent".

Skills Possessed by Academic Librarians

Heads of the academic libraries held different views about the skills of academic librarians. Three out of five were of the view that, like in all other professions, academic librarians needed to be upskilled all the time. They affirmed that based on the evolving nature of the profession, academic librarians needed continuing professional education more frequently and more intensely and indeed, practical hands-on training. The remaining two out of five heads of academic libraries however felt that the library education appeared to be lagging behind in teaching the graduates what is needed on the ground.

Support and Workplace Learning Opportunities

Heads of Libraries were asked to enumerate workplace learning opportunities accorded librarians. Two of the respondents stated that there were no workplace learning opportunities in place. Specifically, one respondent stated that "very little support, in most cases the individual should be self-motivated to even identify areas of self-development". On the whole, the different kinds of learning opportunities listed include workshops, conferences, attachments, short training programmes

Heads of Libraries were asked to state the kinds of support that they offered their staff to develop them professionally. One of the Head Librarians stated that they had established a networking group within the library for information and knowledge sharing. The Head Librarian contributed to the network by sharing information received from personal professional networks. Another stated they undertook mentoring of staff and where possible, recommended them for further studies, attendance at workshop and conferences, adding that subject to availability of funds, those recommended were supported. As one of the Head Librarians deliberately stated training opportunities received through professional networks, an example was given of one member who seized the opportunity to attend a short course in Asia and others completed online training on open source.

Challenges faced by Libraries in Providing CPD

Library leaders were asked to state some of the problems they faced in providing continuing professional development. Such problems stated include lack of funding, lack of regular well planned, and executed continuing professional development programmes, lack of commitment to CPD by institutional leadership, lack of funding for research, library staff not allowed to engage in activities that enrich their skills for reasons of no funds and lastly understaffing prevented library management from releasing librarians to undertake continuing professional development.

Turning to their staff, the academic library leaders wish that librarians could take CPD as a personal responsibility and go out of their way to grab the limited opportunities available to them. The lack of personal initiative levelled against the library staff also surfaced in terms of taking up membership and participation in professional bodies such as the Botswana Library Association.

Areas of Need for Continuing Professional Development

The heads of academic libraries and Botswana Library Association were asked to state some of areas that they believed librarians needed training on. The areas listed had to do with capacity building on applications of information and communication technology, community engagement, change management and self-management. The need to instill personal responsibility in personal development was reiterated as another training need.

Discussion

Academic librarians have a role in the teaching and learning of students by providing information to them timeously. As seen in Table 2, academic libraries in Botswana are staffed mostly by professionals who have undergraduate and postgraduate qualifications. This cohort constitutes 67.6% of the total number of respondents. The most common undergraduate qualification being a Bachelor in Library and Information Studies, whilst Diploma holders make only 28% of respondents. The minimum qualification for head librarians who participated in the study is a Master degree in Library and Information Studies. The profession has managed to attract a sizeable young professionals aged from 26-30 years.

The profession makes use of various skills. The finding that the academic librarians should be trained in the use of various aspects of information and communication technologies (ICTs) concurs with Ondari-Okemwa (2000) on the training needs of professional librarians in the public university libraries in Kenya. The author emphasised the need to train the librarians on virtual librarianship. In the same vein, Burke and Millar (1998) stated that librarians need to develop their own professional skills in the areas of information technology

The participants in in some respect seem to understand the importance of taking the initiative to keep updated about new developments in the profession by subscribing to alerts, blogs, newsletters and various other tools within their professional interests. This finding concurs with Moonasar and Underwood (2018) as well as Ai-Ling (2009) in which the general finding resonates in being well-informed of developments by attending conferences, participating in workshops, reading professional literature, and by subscribing to various online tools.

The respondents appeared motivated to keep informed on the new trends in the profession and fulfilling promotion requirements. Such is achieved by reading professional literature. This sentiment is aligned with the findings of Robinson (2018) and Adanu (2006). Both studies undertaken among special librarians and state-owned university libraries in Ghana respectively found that academic librarians used similar channel to keep abreast of developments in the librarianship profession.

In terms of the kinds and forms of CPD activities attended, the respondents in this study stated that they mostly attended conferences (52%), workshops (21.6%), and workplace training (11.8%). This is in line with Corcorana and McGuiness (2014) as quoted in Robinson (2018). Corcorana and McGuiness (2014) reported that workshops and conferences were significant means of CPD. They noted that attending conferences presented an opportunity to learn about new developments and network with other librarians. Reading professional literature and participating in professional association activities was also mentioned as a major form of CPD for librarians.

In terms of support for participation in CPD, the respondents seem to suggest that it is a shared responsibility between the employers and themselves. Table 8 presents the kinds of support availed to respondents by the employers. There seems to be limited options, the most occurring form of support received was being given time to attend CPD, followed by travel expenses and accommodation funding received by a handful of them and other related fees. Funding appears to be limited. In a study by Lutaaya and Hoskins (2015), amongst others, lack of funding was cited as one of the hindrances in librarians' participation in training activities. It is this apparent lack of support that appears to be the main reason for limited or non-participation of librarians in various CPD activities. On the other hand, Heads of Libraries are of the view that librarians must demonstrate some degree of personal responsibility for their own professional development.

Even though funding seems to be the only type of support that respondents are eyeing, it has emerged that some of the head librarians offer non-monetary support. They support their staff with information on opportunities for further training from their networks and do undertake training themselves. This finding is supported by Chan and Auster (2005) quoted in Robinson (2019) who posits that a supportive manager and organisational climate that facilitates participation in CPD is a form of employer support.

One of the objectives was to establish the perceived impact of CPD on job performance in the last 5 years. Generally, 77 (72.6%) respondents believe that on the job training skills had an impact on their job performance by choosing option "to a great extent" and "to some extent". This sentiment was shared by librarians at the Durban University of Technology in 2015 in a study undertaken by Moonsar and Underwood. All the twenty participants in the study unanimously agreed that CPD played a positive impact in their job performance.

Conclusion and Recommendations

Participants in the study are aware of the importance of CPD for both career development and benefit of the organisations that they service. In terms of the level of involvement, respondents and head of libraries hold divergent views. The respondents are of the view that there is minimal support while library heads seem to believe that the staff lack the initiative to grab opportunities availed to them. All the head librarians differ in terms of skills possessed by librarians upon entry into the profession. In general the academic libraries are staffed by professionals who need to be equipped with up-to-date skills to cope with the challenges of the current era of information provision.

Arising from the results of the study, the following suggestions are offered:

- A workplace training should be implemented by library managements with the assistance of the parent institutions and professional associations in Botswana.

- A budget should be set aside for continuing development of library staff to be at par with their teaching counterparts and meet the ever evolving needs of learners and faculty.

- A mentoring policy be developed and implemented by the library management to ensure skills transfer.

- Research and publishing be made part of the job performance for academic librarians.

- Membership and participation in the activities of professional associations should be incorporated in the performance assessment schedule of academic librarians.

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Determinants of Reading Habits for Serials Publications by Undergraduate Students in Bayero University Library, Nigeria

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Abstract

This study on the determinants of the reading habits of undergraduate students for serials publications in Bayero University Library employed cross-sectional survey design to ascertain the reading habits of 297 undergraduate students of Bayero University. Using simple random sampling technique, the study comprised 185(62.3%) males and 113(37.7%) females, predominantly in levels 300 and 200. The study revealed that the reading habit of undergraduate students for serials publications was predominantly inclined towards leisure than academic purposes such as examinations, research and class assignments. Furthermore, undergraduates mostly read serials publications occasionally and their most read serials publications comprise bulletins, newspapers, magazines and journals. Chi-square test empirically indicated that information literacy skills is a determinant factor for the reading habit of undergraduates towards serials publications. Specifically library services and access were determinants of reading habits for serials publications by undergraduate students.. Conversely, library facilities and availability were not determinants of reading habits for serials publications by undergraduate students. The challenges facing the reading habits of undergraduates towards serials publicatiosn include inadequate literacy skills on access, retrieval and use of serials publications, inadequate awareness about available serials in the library and erratic Internet services or facility for accessing serials publications online. To improve the preference of undergraduates towards more academically inclined reading of serials publications, the library should evolve marketing strategies aimed at promoting the relevance of serials for learning in terms of writing assignments, term papers, articles and conducting research.

Keywords: *Reading Habits, Serials Publications, Reading Campaigns, Under-graduate Students, Bayero University Library*

Introduction

Serials publications are information resources renowned to be current, reliable and continuous. Some of them are produced under sincere and unbiased peer review or ethical editorial processes. Serials publications like journals, annual reports and conference proceedings are veritable sources for research while newspapers and magazines are often read to keep abreast of trends in a field of knowledge or a new developing story that has just been reported for the first time in the news. *The American Library Association (ALA) Glossary of Library and Information Science* defines serials publications as, "a publication issued in successive parts, usually at regular intervals, and, as a rule, intended to be continued indefinitely". They include; journals, newspapers, magazines, bulletins, annual reports and yearbooks, memoirs, proceedings, and transactions

of societies. Most serials are characteristically source of current information and they comprise numerous articles by various authors and on various new items or several fields of a discipline.

Bayero University Library was established in 1964 as an offshoot of Abdullahi Bayero College library, and over the years, it has grown from a single site library to a multiple site library. According *to Bayero University Annual Report (2019),* the serials publications in Bayero University Library comprise over one hundred thousand collections of; journals, conference proceedings, newspapers, magazines, bulletins, newsletters and reports, available in either hard or soft copy. The serials publications in the library are user oriented and they reflect all the academic programmes taught in the university. Owning to their importance for teaching and research, the acquisition of serials publications into the library is given topmost regards.

Reading is an essential tool for knowledge transfer and it is usually inculcated among people through a conscious and painstaking process. The attitude to read and keep reading is what informs reading habits. From the library and information sciences perspective, the reading habit of a person or group of people can be determined in terms of what is read, how often, when and why. Reading serials publications is quite unique, unlike books that are read all through for their knowledge content, serials information sources are often read for a particular knowledge interest.

According to Saka, Bitagi and Garba (2012), the declining reading culture of Africans, particularly Nigerians, is a serious source of concern to librarians who have always served as gatekeepers to published and unpublished information sources, specifically because of their call to ensure that what they acquire is read to support teaching, learning and research. Accordingly, the *rationale* of embarking on this study is that, unlike postgraduate students, the attitudinal disposition of undergraduate students in Bayero University towards serials publications is highly unimpressive when compared to textbooks. The usage statistics for textbooks has always outweighed that of serials publications by a very wide margin and that is quite unhealthy for investment towards acquiring serials publication by the library, because the return on their investment has not been achieved.

In this study, the determinants of the reading habits of undergraduate students towards serials publications will be surveyed to help the library understudy to improve priorities towards providing serials for their undergraduate patrons to read. Furthermore, this study intends to contribute to the existing literature on reading habits with specific interest towards serials information publications.

Research Objectives

i.   To identify the types of serials publications read by undergraduate users of Bayero University Library.

ii.   To discover the frequency of reading serials publications by undergraduate users of Bayero University Library.

iii. To ascertain the purpose of reading serials by undergraduate users of Bayero University Library.

iv.   To identify library facilities for reading serials information sources in Bayero University Library.

v.   To find out challenges associated with reading serials information sources in Bayero University Library.

Research Hypothesis

i.   There is no statistical relationship between library services and the reading habits of undergraduate students towards serials publications

ii.   There is no statistical relationship between library facilities and the reading habits of undergraduate students towards serials publications

iii. There is no statistical relationship between availability of serials and the reading habits of undergraduate students towards serials publications

iv.   There is no statistical relationship between access to serials publications and the reading habits of undergraduate students towards serials publications

v.   There is no statistical relationship between

information literacy skills of undergraduate students and their reading habits towards serials publications

Literature Review

Reading Habits and Library Campaigns towards Reading

According to Aina, Ogunbeni and Ogundipe (2011), the reading habit of an average Nigerian is very worrisome as 40% of adult Nigerians have never read a non-fiction book from cover to cover after they finish secondary school. Specifically, the average Nigerian read less than a book per year and only one percent of successful men and women in Nigeria read one fiction book per month, and more than 30 million Nigerians have graduated from high school with poor reading skills. Thus, the literature on reading habit or reading culture is depleted with sordid stories that depict Nigeria as a flippant reading society and hence the justification for the poor results by students during national examinations, (Yahaya and Babayo, 2012).

In view of the pervasive poor reading habits in Nigeria, the library as a facility that acquires and disseminates organised information resources engaged in promoting reading with the aim of motivating people to read. In Nigeria, the National Library of Nigeria, introduced the Readership Promotion Campaign in 1978 and it became an annual event, not only to foster reading among people, but also to enable research towards understanding the types of materials people read, the frequency with which people read, the sources from which people get reading materials, the nature of reading by different age groups, and the reasons why people read, (Emenyonu, 1983). Interestingly, the Readership Promotion Campaign of the National Library has fostered increased production of reading materials across all levels of education and has significantly led to identifying the obstacles that inhibit reading with a view to finding ways of eliminating them.

The literature on library and readership campaigns indicates that the strategies used by libraries to promote reading habits can be grouped into rewarded and unrewarded readership campaigns. The rewarded readership campaign gives incentives (usually certificates and gifts) to people who read, while on the other hand the unrewarded readership campaign does not provide incentives to people who read. Specifically, the promotion of reading culture as often reported, depicts the partnership and collaboration between relevant stakeholders on reading, including civil society organisation and international agencies like UNICEF and USAID. Accordingly, Ode (2014) noted that an effective readership promotion activity should involve the library, publishers, authors, parents, schools, government and the mass media. A newspaper report by Alakam (2015) informed that Restore Hope for Nigerian Youth Foundation (RHNYF) partnered with schools to donate books and give prizes to winners of a programme they organised on reading campaigns, inter schools essays and debates in three local governments in Abeokuta. Furthermore, the *Thisday* Newspaper once reported that Oluebubechukwu Nwokeoma the Library Prefect at Dominican School in Lagos, did a pet project aimed at promoting reading culture in her school by soliciting for donation of over 130 books that were provided by Clever Clog Books in partnership with PEA. Moreover, Osuigwe, Udeze and Annunobi (2011) reported that programmes like; spelling contests, mobile library service, book donation and readership promotion talks by the Anambra Public Library Board engaged was less effective in motivating readership due to inadequate collaboration with teachers.

Thus, the readership campaigns by libraries have become one of the means for reviving reading culture among our youths. Even if they are not too effective at reviving the dying reading culture among students, it epitomises an acknowledgement that there is a problem with reading and something needs to be done to arrest the situation.

The literature of library and information science has vastly covered various themes on the awareness, (Otu, Asante and Martin, 2015; Nutsupka and Owusu-Ansah, 2017), acquisition (Idhalama and Obi, 2019), access (Salaam, 2001; Tomomowo Ayodele and Hameed, (2018), availability (Iyoro, 2004; Chigbu, 2012; Nwafor, Chikaodi and Nweke, 2019), use and utilization (Oguniyi, Akerele and Afolabi, 2011; Olutoki and Osoba, 2017; Hameed and Osunrinade, 2010), management (Annunobi and Edoka, 2010; Annunobi and Edoka, 2008; Dahiru and Temboge, 2011; Adio, 2006), preservation and conservation (Ifijeh, Iwu-James and Osinulu, 2015) as well as problems

(Annunobi, Nwakwuo and Ezejiofor; 2010,) of serials information sources. Specifically, Priya and Abdulmaleeq (2015) corroborated that because serials publications are crucial to effective library services, topical studies about them have continued to dominate the literature of library and information sciences often published as books and journal articles.

According to Aghadiuno, Agbo and Onyekwediri (2015) serials publications are very crucial information resources and that their availability in libraries cannot be overemphasised. They are not merely available in university libraries because they are indispensable for research and course work by academics and students, but also because they have always been considered as a separately distinguishable library resource by virtue of their contents, format, continuum of bibliographical relationships as well as their methods of acquisition and organisation. Accordingly, Nutsupki and Owusu-Ansah (2017) noted that to ensure appropriate acquisition and the effective use of serial publications, a library should first make a conscientious attempt to feel the pulse of users by determining their needs and expectations before going on to acquire them. Hence, the availability of serials publication entails providing resources in print and non-print format. Moreover availability of serials publication promotes and enhances patronage of libraries towards ensuring that libraries are useful facilities that support teaching, learning and research activities in a university.

The literature on access to serials publications indicates they are read variously for research, teaching, assignment, leisure and self-development. Furthermore, access to serials publications like journals attract readership and usefulness during the employment, professional advancement or career progression of lecturers. Accordingly, Ogunyemi, Akerele and Afolabi (2011) reported that 66% of lecturers have indicated access to serials publications as they read and use journals to support their academic services, while Akinbode and Nwalo (2017) empirically proved that the combination of management, access and use are the prerequisites for serials publications to have any significant impact on whether they will be read and used for making scholarly output by lecturers. Furthermore, Onye (2016) discovered that library resources such as serials publications are available and often accessed

for reading by students as Federal University of Technology Owerri only that poor library facilities and inadequate current resources inhibit their optimal reading.

In Oluchi and Ibrahim (2014) it was reported that the newspaper as a type of serials publications attracts the readership of youths aged 18 - 34 because it contains articles of academic and research value in the field of historiography, more so its currency and up to date quality makes them ideal for teachers to teach and make students learn social studies. Moreover, Olutoki and Osoba (2017) reported that undergraduate students of tertiary institutions in Ogun State read newspapers very frequently, while Fasae, Aladeniyi and Arikawe (2016) informed that undergraduate students read journals and newspapers during examinations because they contain current best practices that are highly needed to achieve academic excellence in their chosen field of study.

According to Akpe, Chukwuka and Salisu (2019) serials publications are crucial and highly needed for scholarly purpose. More so, Chigbu (2012) had opined that even though the zeal to continuously read serials electronically by students is hampered by affordability of Internet subscription, it is quite fascinating to see how students have embraced reading serials publications electronically through their laptops, ipad and mobile phones. Based on a survey of postgraduate students, Komolafe, Gbotosho and Odewale (2020) informed that reading of serials publications is directly proportional to rate of availability and access. In Ogunniyi and Akerele (2011), it was revealed that even though use is directly proportional to availability and access, abysmal reading habit towards serials occurs because they are too old, scanty and improperly arranged.

Information literacy skills are crucial for reading habits to be inculcated or developed by undergraduate students. This is not only for reading serials publications but for all information resources and that is why libraries devote time towards making their users to imbibe information literacy skills. Information literacy skills entail a suite of capabilities possessed by a library patron to efficiently navigate through the myriad of a library's collection to identify the one that perfectly matches his information needs in terms of relevance, authority and objectivity, currency and timeliness, accuracy and reliability as well as

authenticity. Studies by Okuonghae and Ogiamen (2016) have shown that information literacy skills will a go a long way in ensuring user satisfaction and creating independent lifelong learners. Moreover, Oyewusi and Shabi (2016) noted that due to low library use, information literacy skills do not guarantee reading habit and neither does it guarantee library use by students.

On the management services provided for serials publications, Annunobi and Edoka (2008) noted that serials publications are unique collection in university libraries and are often acquired bearing in mind that those who read them want access to current information in volumes and issues.

Methodology

The study was conducted during the 2019/2020 academic session using quantitative methodology and cross sectional survey design. Population of the study comprises 45,010 undergraduate students across the 18 faculties of Bayero University, Kano Nigeria. Simple random sampling method was used to identify the respondents of the study. The sample size of the study was 383 computed using Krejcie and Morgan (1971) formula for determining sample size at 5% margin of error and 95% level of confidence. A self-developed questionnaire

(comprised of 5 sections and 86 items) was designed and research assistants were employed and assigned to various faculties in the university to administer questionnaire to respondents of the study. The questionnaire was subjected to content validity and was tested for Chrobach Alpha reliability of which a score of .874 was obtained. Data collected was presented on tables and analysed using descriptive and inferential statistics.

Findings

Respondents of the study were from eleven (11) faculties of the university. A total of 383 copies of questionnaire were distributed to the respondents out of which 297 (76.4%) were returned and found useful for the study. Majority of the respondents comprised of 185 (62.5%) male and 112 (37.7%) female. Furthermore, 132 (44.4%) of the respondents were between the ages of 23-27 while 2 (0.7%) representing 38 years and above was the highest age of the respondents. Moreover, 134 (45.1%) and 70 (23.6%) were majority of the respondents and they were in levels 3 and 2 respectively.

Table 1: Types of serials publications read by respondents

SERIALS	Frequency	Percent
Newspapers	215	72.4%
Magazines	169	56.9%
Journals	135	45.5%
Annual reports	97	32.7%
Bulletins	237	79.8%
Conference proceedings	65	21.9%
Newsletters	111	37.4%
Pamphlets	102	34.3%

Data in Table 1 indicates that the most read serial publications by respondents of the study is bulletins 79.8%, followed by newspapers and magazines

72.4% and 56.9% respectively. On the other hand, the least read were 65 (21.9%) conference proceedings and 97 (32.7%) annual reports.

Table 2: Purpose of reading serials publications

Serials Publications	Leisure	Research	Assignment	Exams
Newspapers	36 (12.2%)	15 (5.1%)	1 (0.3%)	2 (0.7%)
Magazines	13 (4.3%)	13 (4.3%)	2 (0.7%)	2 (0.7%)
Journals	28 (9.5%)	10 (3.3%)	5 (1.7%)	3 (1.0%)
Annual reports	10 (3.3%)	9 (3.0%)	5 (1.7%)	4 (1.3%)
Bulletins	37 (12.5%)	17 (5.7%)	7 (2.4%)	2 (0.7%)
Conference proceedings	10 (3.3%)	4 (1.3%)	2 (0.7%)	3 (1.0%)
Newsletters	18 (6.1%)	6 (2.0%)	3 (1.0%)	3 (1.0%)
Pamphlets	15 (5.1%)	7 (2.4%)	2 (0.7%)	3 (1.0%)
TOTAL	**167 (56.3%)**	**81 (27.1%)**	**27(9.2%)**	**22(7.4)**

Data in Table 2 indicates that the purpose underlying the reading habit of the respondents towards serials publications was predominantly 167 (56.3%) leisure and 81 (27.1%) for research. Moreover, the reading habit of respondents towards exams was (9.2%) and 22 (7.4) for assignment.

Table 3: Frequency of reading serials publications

Serials Publications	Daily	Weekly	Monthly	Occasionally
Newspapers	17 (5.7%)	13 (4.3%)	4 (1.3%)	19 (6.4%)
Magazines	3 (1.0%)	9 (3.0%)	10 (3.4%)	24 (8.1%)
Journals	4 (1.3%)	7 (2.4%)	7 (2.4%)	16 (5.4%)
Annual reports	2 (0.7%)	2 (0.7%)	4 (1.3%)	14 (4.7%)
Bulletins	7 (2.4%)	37 (12.5%)	5 (1.7%)	10 (3.4%)
Conference proceedings	1 (0.3%)	6 (2.0%)	2 (0.7%)	19 (6.4%)
Newsletters	4 (1.3%)	5 (1.7%)	4 (1.3%)	15 (5.1%)
Pamphlets	3 (1.0%)	3 (1.0%)	4 (1.3%)	17 (5.7%)
TOTAL	**41 (13.7%)**	**82 (27.7)**	**40 (13.4%)**	**134 (45.2%)**

Data in Table 3 indicates that 134 (45.2%) of respondents read serials publications occasionally followed by 82 (27.7%) weekly. Moreover, their reading habit is 41 (13.7%) daily and 40 (13.4%) weekly.

Table 4: Library facilities that enhance undergraduates students reading habit towards serials publications

Facilities	Available	Unavailable	Not Aware
Tables	260 (87.5%)	16 (5.4%)	21 (7.1%)
Chairs	253 (85.2%)	20 (6.7%)	24 (8.1%)
Printer	84 (28.3%)	140 (47.1%)	73 (24.6%)
Computer	76 (25.6%)	153 (51.5%)	68 (22.9%)
Reading carrels	47 (15.8%)	152 (51.2%)	98 (33.0%)
Photocopy machine	159 (53.5%)	58 (19.5%)	80 (26.9%)
Internet	64 (21.5%)	163 (54.9%)	70 (23.6%)
OPAC/CARDEX	68 (22.9%)	81 (27.3%)	148 (49.8%)

Data in Table 4 indicates that 260 (87.5%) respondents confirmed the availability of chairs for reading serials publication in the library while 253 (85.2%) and 159 (53.5%) indicated availability of chairs and photocopy machine. Contrarily, 140 (47.1%), 153 (51.5%), 163 (54.9%) and 152 (51.2%) respondents of the study indicated unavailability of printer, computer, Internet and reading carrels to support reading serials publications. In the same vein, 148(49.8%) indicated the unawareness of OPAC/ CARDEX as a facility to support reading serials publication.

Table 5: Inhibitors to undergraduate students reading habit towards serials publications

Inhibitors	SA=1	A=2	D=3	SD=4	(X)	DECISION
Serials publications are not accessible from outside the library	89 (30.0%)	124 (41.8%)	64 (21.5%)	20 (6.7%)	2.1	D
Absence of internet for accessing serials publications online	37 (12.5%)	95 (32.0%)	103 (34.7%)	62 (20.9%)	2.6	A
Serials are not properly organised for easy access	49 (132%)	132 (44.4%)	83 (27.9%)	33 (11.1%)	2.5	D
Outdated and noncurrent nature of serials publications in the library	48 (16.2%)	116 (39.1%)	93 (31.3%)	40 (13.5%)	2.4	D
Inadequate awareness about available serials in the library	36 (12.1%)	90 (30.3%)	123 (41.4%)	48 (16.2%)	2.6	A
Inadequate literacy skills on access, retrieval and use of serials publications	70 (23.6)	134 (45.1%)	66 (22.2%)	27 (9.1%)	2.6	A
Absence of printing facility in the library	58 (19.5%)	98(33.0%)	101 (34.0%)	40 (13.5%)	2.4	D
Absence of photocopy facility in the library	49 (16.5%)	95 (32.0%)	118 (39.7%)	35 (11.8%)	2.4	D
Prohibition of copying serials to external memory or saving facility by the library	46 (15.5%)	119(40.1)	81 (27.3%)	51 (17.2%)	2.5	D
Serials publications in the library are irrelevant to my course of study	60 (20.2%)	130 (43.8%)	78 (26.3%)	29 (9.7%)	2.3	D
Delay, cancellation and inconsistency in providing serials publications by the library	45(15.2%)	106(35.7%)	89(30.0%)	57 (19.2%)	2.5	D

The mean decision underlying data on Table 5 is; x > 2.5 = agree while x $\leq$ 2.5 is disagree. Thus, the challenges militating against the reading habit of the respondents towards serials publications are;

(a)   Inadequate literacy skills on access, retrieval and use of serials publications.

(b)   Inadequate awareness about available serials in the library.

(c)   Absence of internet for accessing serials publications online.

Hypotheses Results

Table 6: statistical relationship between library facilities and reading habit towards serials publications

Library Facilities	Reading Habit					Total	Chi-square	df	p-value
	Daily	Weekly	Monthly	Occasionally	Never read				
Available	7 (2.4%)	16 (5.4%)	39 (13.1%)	13 (4.4%)	3 (1.0%)	78 (26.3%)			
Not Available	38 (12.8%)	46 (15.5%)	80 (26.9%)	35(11.8%)	4 (1.3%)	203 (68.4%)	14.743^a	8	.064
Not Sure	5 (1.7%)	7 (2.4%)	2 (0.7%)	2 (0.7%)	0 (0%)	16 (5.4%)			

The cross tabulation and chi-square results in Table 6 indicate that ($x2 = (8)$ 14.743, p=0.064>0.05). The null hypothesis is accepted. Hence, library facilities have no statistical relationship with reading habits. In essence, library facilities like chairs, tables, OPAC, internet, computers, printer, etc; do not influence the reading habit of the undergraduates in Bayero University towards reading serials publications.

Table 7: Statistical relationship between library services and the reading habit towards serials publications

Library Services	Reading Habit					Total	Chi-square	df	p-value
	Daily	Weekly	Monthly	Occasionally	Never read				
Available	4 (1.4%)	2 (.7%)	8 (2.7%)	9 (3.1%)	2 (0.7%)	78 (26.3%)	27.510^a	8	.001.
Not Available	21(7.1%)	30 (10.2%)	76 (25.9%)	30(10.2%)	3 (1.0%)	203 (68.4%)			
Not Sure	25 (8.5%)	35 (11.9%)	36 (12.2%)	11(3.7%)	2 (0.7%)	16 (5.4%)			

The cross tabulation and chi-square results on Table 7 indicate that ($x2 = (8)27.510^a$ p=0.001<0.05). The null hypothesis is rejected. Hence, it can be inferred that library services such as; photocopy, binding, cataloguing, selective dissemination of information and etcetera influences the reading habits of the respondents towards reading serials publications.

Table 8: Statistical relationship between availability of serials publications and the reading habit towards serials publications

Availability	Reading Habit					Total	Chi-square	df	p-value
	Daily	Weekly	Monthly	Occasionally	Never read				
Very High	0	0	1(0.3%)	0	0	1(0.3%)	16.467^a	12	.171
High	13(4.4%)	22(7.4%)	41(13.8%)	14(4.7%)	6(2.0%)	96(32.3%)			
Low	31(10.4%)	41(13.8%)	74(24.9%)	34(11.4%)	1(0.3%)	181(60.9%)			
Very low	6(2.0%)	6(2.0%)	5(1.7%)	2(.7%)	0	19(6.4%)			

The cross tabulation and chi-square results on Table 8 indicates that $x2 = (12)16.467^a$, p=0.171>0.05. As such, the null hypothesis is accepted. Hence, there is no statistical relationship between availability of serials publications in the library and the reading habits of undergraduates

Table 9: Statistical relationship between access to serial publications and the reading habit of undergraduate students

Access	Reading Habit					Total	Chi-square	df	p-value
	Daily	Weekly	Monthly	Occasionally	Never read				
Very High	0	1(0.3%)	1 (0.3%	0	1(0.3%)	3 (1.0%)	27.942^a	12	.006
High	30 (10.1%)	53 (17.8%)	101(34.0%)	40 (13.5%)	4 (1.3%)	228 (76.8%)			
Low	1(0.3%)	1(0.3%)	1 (0.3%)	1(0.3%)	1(0.3%)	64 (21.5%)			
Very low	0	0	0	1(0.3%)	1(0.3%)	2 (0.7%)			

The cross tabulation and chi-square results on Table 9 indicates that $(x2 = (8)27.942^a$, p=0.006<0.05). The null hypothesis is rejected. Hence, there is statistical relationship between access to serials publications and the reading habits of undergraduate students.

Table 10: Statistical relationship between literacy skills and reading habits of towards serials publications

Literacy Skills	Reading Habit					Total	Chi-square	df	p-value
	Daily	Weekly	Monthly	Occasionally	Never read				
Very High	0	0	0	1(0.3%)	7(2.4%)	8(2.7%)	405.595^a	12	.000
High	0	0	29(9.8%)	29(9.8%)	0	58(19.5%)			
Low	15(5.1%)	35(11.8%)	80(26.9%)	20(6.7%)	0	150(50.5%)			
Very low	0	0	12(4.0%)	34(11.4%)	35(11.8%)	81(27.3%)			

The cross tabulation and chi-square results on Table 10 indicate that $(x2 = (12)405.5952^a$, p=0.000<0.05). The null hypothesis is rejected and hence there is a statistical relationship between information literacy skills and the reading habits of undergraduate students towards serials publications.

Discussion of Findings

Owing to a variety of serials available to undergraduates in Bayero University Library, they are choosy with reading serials publications and they tend to read those that have tendencies for satisfying their preference for leisure than for academic works such as assignments and research. This reaffirms the findings in the study of Hughes-Hassel and Rodge (2007) where two-thirds of middle school students predominantly had reading habits in favour of magazines for fun and relaxation as well as in order to learn new things or kill boredom. More so, findings of the study reinstate Okolo and Ivwighreghweta (2020) where undergraduate students read for 2-4 hours only when the need arises.

Despite the fact that serials publications carry current information about the advancements or happenings in all facets of life like economy, politics, religion, society, education, fashion, sports, culture, etc; the reading habits of undergraduate students of Bayero University towards them is characterised

with inconsistency. This is unlike the findings of the study by Olotoki and Osoba (2017) as well as Bankole and Akinyede (2019) where it was discovered that majority of first year students at Federal University Oye-Ekiti devote 3-4 hours daily to read in order to pass examinations, complete class assignments and improve spoken and written expression. Thus, the inconsistent reading habits of undergraduates towards serials publications indicates they are underappreciated or unfamiliar to undergraduate students for learning purpose. In line with Bamidele, Omeluzor and Amadi (2013) it can be deduced that the reading habits of undergraduates towards serials publications is over shadowed by the preference for other information resources like textbooks.

In this study, data analysed indicates that bulletin is the most read type of serials publication. This reaffirms the findings of Tomomowo-Ayodele and Hameed (2018) who reported that equal access to serials publications by university libraries in Ogun State is responsible for why undergraduates frequently read bulletins and get better informed about things happening in their universities. Even though Oyedum (2011) underscored the importance of physical library facilities like tables, seats, air condition, standby power supply and good lighting system towards influencing the sustained reading of library resources, this study indicates that mere availability of information resources and library facilities may not determine reading habits.

Thus, as in the study of Hussain and Abalkhail (2013) and as corroborated by Komolafe, Gbotosho and Odewale (2020) the determinants of undergraduate students reading habits towards serials publications as revealed through this study are; library services, information literacy and accessibility of serials publications. The impact of information technologies on access to reading materials as highlighted by Walia and Sinha (2014) purports that a paradigm shift towards infotainment via social media has redefined access to reading materials. Hence, the technology savvy youths of nowadays may be influenced to reading with entertaining technologies as compared to when these technologies are absent. Thus, libraries can enhance the reading habits towards serials publications by joining publishers to make social media a tool for reading than for socialising.

The library itself could be the cause of poor reading habits displayed by respondents of the study towards serial publications. The rate at which respondents of the study revealed unavailability of critical infrastructures such as the Internet, computer and printers that libraries provide to influence the reading of serials publication via online sources as opined by Chigbu (2012) is a cause for concern. Accordingly, the influence of library facilities e.g computers, Internet, photocopy machine, printers and *etcetera* towards reading habits of undergraduate students requires that libraries should devote more resources towards improvising library facilities with the aim of making libraries conducive for reading.

Conclusion and Recommendations

Though serials publications are crucial for tertiary education, their usefulness is not properly harnessed and exploited for learning by undergraduate patrons of Bayero University Library. Hence, there is the need to initiate ways of making undergraduate students justify investments on acquiring serials publications for academic purpose.

To improve the preference of undergraduates towards more academically inclined reading of serials publications, libraries should liaise with lecturers and evolve marketing strategies aimed at promoting the relevance of serials for learning, especially in terms of writing assignments, term papers, articles and conducting research.

It is also recommended that Bayero University Library should improve the provision of critical infrastructure like tables, seats, air condition, standby power supply, good lighting system, the Internet, computers, printing services, photocopy services, as well as indexing and abstracting services needed to attract readership of undergraduates towards serial publications.

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