

Expectations of Academics from the 21st Century Academic Library: Experiences from Zimbabwe

Rangarirai Moira Mabweazara and Sandy Zinn

Department of Library and Information Science

*University of the Western Cape
Cape Town, South Africa*

rmmabweazara@uwc.ac.za

szinn@uwc.ac.za

compare the views of both academics and the academic library.

Keywords: Academic Library, Higher Education, Zimbabwe

Abstract

The study investigated the needs and expectations of academics from two academic libraries. To explore this broad question, the study sought to determine the scholarly communication, research data management, collaboration, teaching and learning, and new pedagogical needs and expectations of academics. The study also identified the social web tools used by academics for maintaining their research. The literature review is anchored in the study's objectives. A quantitative approach that deployed a web-based questionnaire is adopted. Data was collected from a combined sample of 227 academics and the response rate was 60%. The findings reinforce established studies by highlighting that academics expect their libraries to provide scholarly communication support, online information literacy sessions, teaching and learning support, and co-hosting workshops, co-teaching information literacy, co-deploying new technologies and co-publishing. In spite of these expectations, the Zimbabwean academic library is yet to fulfil its expected role of providing the necessary services and resources to academics. It is recommended that academic libraries in Zimbabwe find the means to address the demands made by academics. Further research should

Introduction

The 21st Century information environment is characterised by accelerated technology development and globalised access to information (National Academies of Sciences, Engineering and Medicines, 2019). The 21st Century academic is a modern lecturer and researcher who is appointed to teach, research, engage learners and absorb new discoveries from students, other experts and sources of knowledge in institutions of higher learning (Al-Majed, Al-Kathiri, Al-Ajmi, and Al-Mamam, 2017).

Mushemeza (2016) asserts that in sub-Saharan Africa, academics operate in an environment which is characterised by political, economic, social crises that impact the operations of the higher education system. Because universities play a crucial part in national development through knowledge production (Cloete, Bailey, Pillay, Bunting, and Maassen, 2011), academics as significant contributors through teaching and research should have access to adequate and relevant academic library facilities (Klain-Gabbay and Shoham, 2019).

A 21st Century academic library prioritises the enrichment of academics' teaching, research, knowledge advancement and research output through providing resources and services that meet their needs (*Georgia Technology Library Strategic Plan 2013-2016, 2013*). The changing information landscape within the realm of tertiary institutions has impacted academic libraries; for example, technological advancement and speed of research

production have put academic libraries under intense pressure to adapt to these changes (Jaguszewski and Williams, 2013). In a bid to invalidate the “one-size-fits-all” element, academic libraries have been challenged to understand the complex ever-changing needs of their patrons with the aim of providing relevant and useful services (Mathuews and Harper, 2018). In the face of such demands, academic libraries should no-longer only observe patrons’ behaviour, but are now required to find better ways of gathering library patrons’ requirements. This situation has compelled academic libraries to apply methods such as usability testing, user interviews and surveys to design services from a user experience (UX) perspective (Young, Choo, and Chandler, 2020).

The main thrust of an academic library is to fully support the roles of academics as one of a group of patrons. Academics depend on academic libraries (Daniel, 2016), because the library contributes immensely towards teaching, learning and research (Kiran, 2010). Borrego and Anglada (2015) attest that the library is the main source of scholarly resources for academics, followed by free online sources. While it is important to acknowledge that the academic library faces competition from other information sources, especially online sources (Bell, 2002), academic libraries should make their resources stand out from what their competitors are offering since they have a long standing history of offering credible and scholarly resources (Wilkinson and Lubas, 2016). Additionally, academic libraries offer information literacy programmes which help academics with skills to conduct quality research (Tshuma and Chigada, 2018).

Problem Statement

Academics are expected to access high quality resources and services from their academic libraries (*Research Libraries UK, 2011*). Globally, academic libraries have been prompted to “reinvent their services” (Abduldayan, Dang, Karemani and Obadia, 2016) to ensure that they maintain their long and commendable reputation of service provision (Pinfield, Cox, and Rutter, 2017). African academic libraries in Kenya and Zimbabwe have scaled up their resources through consortiums (Kasalu and Ojiambo, 2015, Chisita and Fombad, 2019). However, Research Libraries UK (2011) noted that a lack of

contact with academics created a disconnection between content that academics use and content that libraries provide. Researchers have reported that the disconnection is attributed to poor marketing strategies (Mawere and Sai, 2018) and persistent economic problems in Zimbabwe’s institution of higher education (Chinyoka and Mutambara, 2020). Despite these challenges academic libraries are expected to meet academics’ teaching and research needs. The main objective of this research is to answer the following question: What are the needs and expectations of modern academics from the academic library? Pursuing this research is necessary, considering that a well-resourced academic library contributes significantly in assisting academics in performing their core duties. It is crucial to go beyond anecdote to understand the needs and expectations of modern academics.

The study aimed to investigate the needs and expectations of modern academics from the academic library. The attendant objectives sought to determine how the academic library can meet the scholarly communication and research needs and expectations, the research data management needs and expectations, and the teaching and learning needs and expectations of academics; the form of support required from the academic library in implementing new pedagogies; the collaboration needs and expectations of academics from the academic library; and identify social web tools used by academics to maintain and promote their research

Literature Review

The 21st Century higher education is considered through the prism of new approaches of internationalisation and trans-nationalisation, quality assurance and educational quality (Avdeeva, Kulik, Koseva, Zhilkina, and Belogurov, 2017). In the face of these developments, universities in Europe have made efforts to improve their quality of teaching and research (Fatkullina, Morozkina, and Suleimanova, 2015). Pham and Tanner (2015) reveal that academics at university are meant to teach students, conduct research, and service the university. As part of fulfilling their duties, academics are using and creating Open Educational Resources (OERs) in teaching and learning, and new pedagogies such as flipped classrooms, blended learning and mobile learning (Bell, Dempsey, and Fister, 2015). Academics

therefore expect librarians to be added in the e-learning systems to access their teaching materials and make them freely available as well as add links of articles, e-books and other licensed content (Braddlee and Vanscoy, 2019).

In Sub-Saharan Africa, specifically in Zimbabwe, institutions of higher learning are faced with economic challenges that have negatively impacted learning, intellectual output, production of knowledge, and adequate infrastructure (Chinyoka and Mutambara, 2020). Academics are challenged to deliver amid these aforementioned obstacles (Majoni, 2014). In South Africa, for example, academics presume that their academic libraries should offer better research support services (Ngibe and Lekhaya, 2016).

Onyancha (2018) reports that in Sub-Saharan Africa, researchers “needs will extend to include knowledge of which tools to use to maximise research visibility, various types of metrics that are used to assess output and impact, ... and how to interpret and use metrics”. In Uganda, academic libraries are slowly embracing a culture of dissemination of research findings to ensure development of communities (Buwule and Mutula, 2017).

Although research data management (RDM) services are still in their infancy, Chiware and Becker (2018) reveal that in Botswana, Lesotho, Malawi, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the following services are offered: institutional repositories, copyright and patent advice, general statistical software, data analysis, research data awareness workshops and advice on where to archive disciplinary data.

Academics and librarians in South Africa are co-designing learning events and materials for information literacy (Fullard, 2016; Mohamed 2019; Thomas and Saib, 2013). In South Africa, there is growing collaboration between academics and academic libraries which are being used as publishing spaces (Raju, 2018).

Social web tools such as Twitter (Joubert and Costas, 2019) and ResearchGate (Onyancha, 2015) are used for sharing publications by researchers in South Africa. On a different note, academics in Nigeria demand that academic libraries offer a technological infrastructure, acquisition of e-resources for multiple and concurrent access and

creating user awareness of available OERs (Echezona and Chigbu, 2018). Ocholla, Mutsunguma and Hadebe (2016) highlight that academics in South Africa acknowledged the quality of workshops offered by their academic library.

Regardless of these pressures, African academic libraries just like their parent institutions are under-resourced because they lack funding, technological facilities and there is resistance to change by librarians (Jain and Akakandelwa, 2016). Traditionally, libraries were more concerned about building collections and benchmarking was defined by loan statistics, library usage statistics and book statistics (Hills, 2016). However, in the modern environment, the diverse user communities have become a focal point amongst academic libraries (Hills, 2016). An examination of the literature acknowledges the study’s argument that academics in Africa are faced with limited resources. Therefore a study on the needs and expectations of academics from their Zimbabwean academic libraries is imperative.

Conceptual framework

The study applied a conceptual framework compiled from a review of the literature. See *Figure 1*. Each element formed the basis of the questionnaire which was used to interpret the expectations of academics from their academic libraries.

Scholarly Communication and Research Support: Scholarly communication is understood as the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use (ACRL, 2017:online). Academics expect their academic libraries to offer research support by providing information on new models of scholarship and compilation of bibliographical items (Klain-Gabbay and Shoham, 2019b: 729).

Research Data Management (RDM) Support: The drivers of RDM are the need for research data storage, security, quality, compliance, preservation and sharing (Pinfield, Cox and Smith, 2014: 28). Academics are increasingly encouraged to share their research data in order to increase citations, and because of this they require formal training in all aspects of RDM (Unal, Chowdhury, Kurbanoglu, Boustany, and Walton, 2019: online).

Academic libraries are therefore required to apply the FAIR data principles and make data findable, accessible, interoperable and reusable (LIBER, 2017).

Social Web Tools for Promoting Personal Research: Modern academics are actively using social media to interact socially and academically. In reaching out to academics, social media platforms are being used for instant service delivery in academic libraries (Mabweazara and Zinn, 2016).

Teaching and Learning Support: Academic libraries in the 21st Century offer academics online copyright clearance services, online requests for materials acquisition and selection of short-loan materials (Klain-Gabbay and Shoham, 2019b).

New Pedagogical Support: The new

pedagogies is a new teaching structure based online (Wang and Zhu, 2019) and student centred learning where academics partner with students in deep learning (Fullan and Langworthy, 2014:64). Academic libraries are expected to offer online workshops, how-to guides, creating resources for self-directed guides and research activities *inter alia* to academics (Cowan and Eva, 2016).

Expectations of Academics from the 21st Century Academic Library: Experiences from Zimbabwe

Faculty-Librarian Collaboration: Academic libraries are expected to co-teach information literacy programmes and offer research support to postgraduate students with academics (Atkinson, 2018).

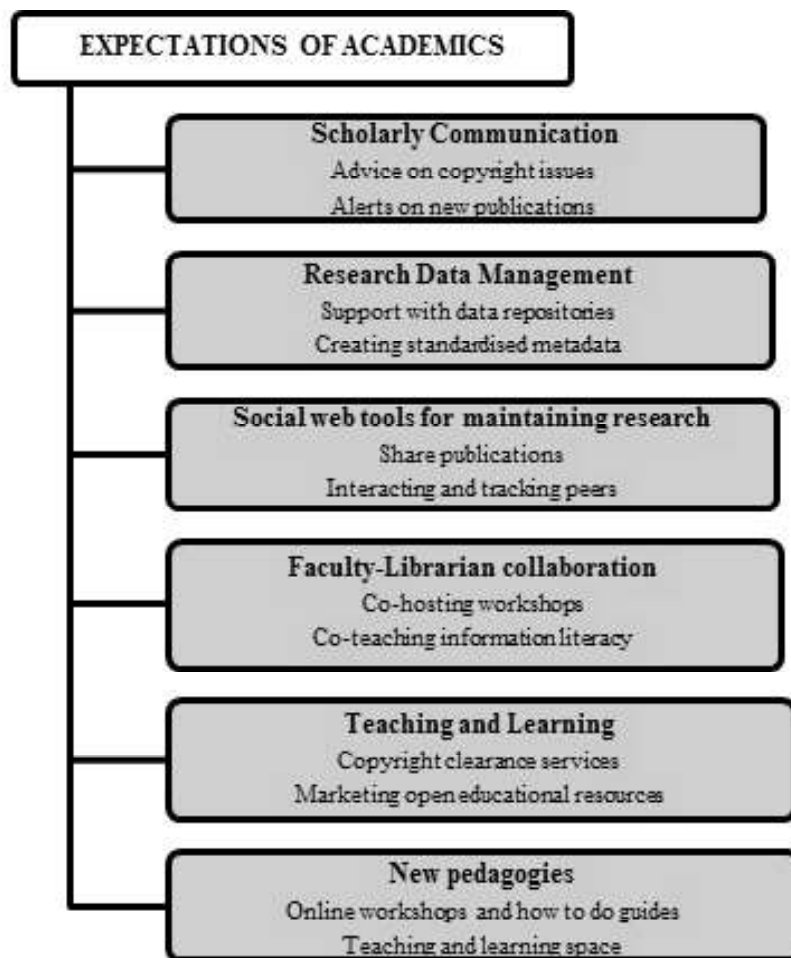


Figure 1: Expectations of academics from the 21st century academic library

Research Methodology

The study was conducted in Zimbabwe targeting two universities, namely, the Midlands State University (MSU) and Lupane State University (LSU). The MSU opened its doors in 1999, and has a total of nine faculties and enrolls 20,635 students. One of the mandates of the MSU is to ensure the “extension of arts, science and learning, the preservation, dissemination of knowledge that is relevant for the development of the people of Zimbabwe” (Midlands State University 2020: online). The LSU was established in 2005; it consists of six faculties and a student enrolment of 3,022. The LSU was established to cater for the underserved communities and one of its core values includes rural community development (*Lupane State University, 2020: online*). These two public universities were selected to provide a comparison since the two universities differ in terms of size, age and areas of focus.

The total population of academics in the two universities was 562. Using Krejcie and Morgan’s (1970) sampling framework and assuming a margin of error of 5%, the recommended sample size is 228. The sample size was divided proportionately according to the number of academics in each university. This produced sample sizes of 126 MSU and 101 LSU academics.

The research adopted a quantitative research approach. Data was collected through a web-based questionnaire that included open and closed questions which was distributed via emails. The web-based questionnaire improved data quality by applying validation checks, for example, alerting respondents when they entered implausible or incomplete answers, and it automatically transformed the electronic data into an analysable format (Excel spreadsheet). Data collected from closed questions was analysed using the Statistical Package for the Social Sciences (SPSS) and Microsoft Excel. Data gathered from open-ended questions was analysed using thematic analysis, a method which allowed the identification of patterns and themes of meaning. In this study, coding and themes were guided by

concepts underpinning the study. When presenting responses from open-ended questions, each respondent is anonymised and identified by a number followed by the name of institution, for example, Academic #2 MSU for Midlands State University and Academic #2 LSU for Lupane State University.

Results and discussion

This section draws attention to the survey results of the academics’ needs and expectations from academic libraries in Zimbabwe. The section locates the findings of this study within the reviewed literature and the conceptual framework. The combined response rate was 136 (60%) participants, with 79 (62%) at MSU and 57 (56%) at LSU. A response rate of 60% is considered good, while a 50% response rate is considered adequate (Babbie 2007).

Scholarly Communication and Research Support

Respondents were presented with a list of scholarly communication requirements and asked to select any requirements which are applicable to their current needs and expectations. Results show that all 136 (100%) respondents either *agreed/strongly agreed* to expecting their academic libraries to offer information on Open Access journals and books, links to internal and external research funding, access to institutional research output and scholarly publications, information on digital research and citation management tools and research software packages. On the other hand, respondents either *agreed/strongly agreed* that they required flexible bookings for research training its rating was pegged at 51 (79%) LSU and 65 (82%) MSU. These results are presented in Table 1.

The results suggest that academic libraries should offer research support based on all these specified scholarly communication requirements. Pontika (2019) reports that academics in the modern environment require scholarly communication services to help them achieve their research activities.

Table 1. Scholarly Communication and Research Support (N = 136)

Scholarly Communication requirements	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	LSU <i>f</i> %	MSU <i>f</i> %	LSU <i>f</i> %	MSU <i>f</i> %	LSU <i>f</i> %	MSU <i>f</i> %	LSU <i>f</i> %	MSU <i>f</i> %	LSU <i>f</i> %	MSU <i>f</i> %
Provision of information on specific accredited Open Access journals and books	8 14	12 15	49 86	67 85	0 0	0 0	0 0	0 0	0 0	0 0
Provision of links to internal and external research funding agencies	9 16	14 18	48 84	65 82	0 0	0 0	0 0	0 0	0 0	0 0
Access to your institutional research output statistics	11 19	15 19	46 81	64 81	0 0	0 0	0 0	0 0	0 0	0 0
Access to scholarly publications	13 23	18 23	44 77	61 77	0 0	0 0	0 0	0 0	0 0	0 0
Provision of reliable information on digital research and citation management tools	13 23	21 27	44 77	58 73	0 0	0 0	0 0	0 0	0 0	0 0
Flexible booking for research training whenever needed	8 14	8 10	43 75	57 72	0 0	0 0	6 11	14 18	0 0	0 0
Regular and instant updates on latest publications related to your field of specialty	14 25	16 20	43 75	63 80	0 0	0 0	0 0	0 0	0 0	0 0
Access to research software packages	14 25	22 28	43 75	57 72	0 0	0 0	0 0	0 0	0 0	0 0

Research Data Management Support

The study sought to find out whether academics expect the academic library to offer RDM tools e.g. RDM planning guides, research data repositories, and data processing software (i.e. R or SPSS). The results revealed that 63 (80%) respondents at MSU and 39 (68%) respondents at LSU never required or expected the academic library to offer RDM support. This finding suggests that Zimbabwean academics are not aware of or receptive to the RDM concept. Academics require RDM training sessions to create awareness and wide acceptance. This has consequences for the quality of Zimbabwean higher education as it may slow down the growth and development of research production. These findings are consonant with Renwick, winter, and Gill (2017) who noted that researchers owned data but did not have enough knowledge or experience in managing it. Tang and Hu (2019) signal that academics require training in data management plans, storage, preservation, sharing and dissemination while librarians require data service skills. Academic librarians are key players in the research data management planning process, data discovery, reuse, collection and management (Brochu and Burns, 2019). The literature is replete with evidence that academic libraries across the globe are faced with a mandate to assist academics with managing their research data through providing credible tools and services such as RDM planning, data repositories

and data processing software (Chawinga and Zinn, 2019).

Social Web Tools for Maintaining and Promoting Personal Research

As academics are involved in research activities, they require knowledge of using social media platforms to monitor and track altmetrics for their personal research. Table 2 shows that the majority of academics at MSU and LSU used LinkedIn, Research Gate, Academia.edu and Twitter. Unlike the Zimbabwean based academics, an international survey conducted by Jaring and Bäck (2017) covering Belgium, Finland, Italy, New Zealand, and Romania revealed that only LinkedIn and Twitter were the most used for promoting personal research. The reason for the difference could be that academics in Jaring and Bäck's (2017) study preferred LinkedIn and Twitter because they had used these social media platforms for personal use for several years. However, the platforms favoured by Zimbabwean academics gained popularity in recent years due to an increase in the number of Internet service providers (Internet World Stats, 2011: online). These platforms provide a space for academics to not only promote and monitor their research, but to discuss and connect with local and global professionals in their respective fields. In Zimbabwe, all (100%) respondents at both institutions disagreed that they were signed up on a blog. It is not surprising for

macro-blogs to be less popular among academics in Zimbabwe since macro-blogging is time consuming compared to Twitter (micro-blogging) which has a limited word count. Matthews (2018: online) comments that academics spend most of their time

teaching, supervising students’ research, conducting personal research and conducting administrative work. Due to these commitments, they barely find time for macro-blogging.

Table 2. Social Web Tools (N = 136)

Social Media Tools	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	LSU	MSU	LSU	MSU	LSU	MSU	LSU	MSU	LSU	MSU
	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %
Blog	0 0	0 0	0 0	0 0	0 0	0 0	57 100	79 100	0 0	0 0
Research Gate	12 21	0 0	45 79	60 76	0 0	0 0	0 0	19 24	0 0	0 0
Academia.edu	3 5	0 0	48 84	58 73	0 0	0 0	6 11	21 27	0 0	0 0
LinkedIn	10 18	6 8	47 82	59 75	0 0	0 0	0 0	0 0	0 0	14 17
Twitter	0 0	0 0	45 79	52 66	0 0	0 0	12 21	27 34	0 0	0 0

Teaching and Learning Support

A closed question requested academics to select their teaching and learning needs from a list outlined in Table 3. All 136 (100%) academics at both institutions *agreed/strongly agreed* that they needed support in developing, sharing and accessing Open Educational Resources (OERs), remote access to reference services, alerts on new services and resources, equipment loan (i.e. loaning of laptops) and off-campus access to e-resources. These findings suggest that Zimbabwean based academics need and expect their academic libraries to support their teaching and learning activities by designing, sharing and providing links to OERs, equipment loan, remote access to reference services

and e-resources. An open-ended question required academics to mention any additional teaching and learning support expectations other than those presented in Table 4. One respondent from LSU made the following remarks: “more updated teaching and learning software” (Academic #23 LSU). This finding explains that LSU academics expect their academic library to offer updated teaching and learning software. Afebende, Ma, Mubarak, Torrens, Ferreira, Beasley, Chu, and Ford (2016) believe that a deficit in technological facilities in developing countries is because of a lack of financial support, but academic libraries are using collaborative efforts to mobilise funding through national, regional and international networks.

Table 3. Teaching and Learning Support (N = 136)

Teaching and Learning support	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	LSU	MSU	LSU	MSU	LSU	MSU	LSU	MSU	LSU	MSU
	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %	<i>f</i> %
Open Educational Resources (OERs)	8 14	28 35	49 86	51 65	0 0	0 0	0 0	0 0	0 0	0 0
Remote access to reference services	14 25	74 96	45 75	5 6	0 0	0 0	0 0	0 0	0 0	0 0
Equipment loan services	7 12	19 24	50 88	60 76	0 0	0 0	0 0	0 0	0 0	0 0
Off-campus access to e-resources	12 21	29 37	45 79	50 63	0 0	0 0	0 0	0 0	0 0	0 0
Alerts on new services and resources	11 19	15 19	46 81	64 81	0 0	0 0	0 0	0 0	0 0	0 0

New Pedagogical Support

All 136 (100%) respondents require their academic libraries to offer online information literacy programmes. The reasoning behind the requirement of online information literacy sessions by academics in Zimbabwe emanates from the need to suit their busy schedules and may also help them hone their digital skills. An open-ended question required respondents to mention any other support they expect from their academic libraries. An academic from MSU commented that “More workshops on the use of new technologies (i.e. social web and citation management, RDM tools and research software e.g. SPSS and R)” are required (Academic #59 MSU). This finding points to the reasoning that MSU academics expect their academic library to equip them with skills for handling new technologies. The use of new technologies requires digital literacy skills and these skills are fundamental in ensuring the advancement in the application of new teaching methods among academic institutions in the current and future environment (Hallam, Thomas, and Beach, 2018). In this light, 21st Century academic libraries should host workshops for academics in the form of information literacy sessions to assist with technological skills and research software.

Faculty-Librarian Collaboration

In the modern academic environment, networking has become a significant requirement amongst university academics. In particular, the 21st Century information environment demands that faculties and academic libraries should collaborate on several activities (Atkinson, 2018). Table 4 highlights that all 136 (100%) academics *agreed/strongly agreed*

that they required to partner in the acquisition of specific resources. In comparison, all 57 (100%) LSU academics and 72 (91%) MSU academics *agreed/strongly agreed* that they required co-hosting workshops and conferences as part of the collaboration efforts. While all 57(100%) academics at LSU required co-deploying new campus technologies, 66 (84%) MSU academics required this service. All 57(100%) LSU and 63(80%) MSU academics required collaboration in teaching information literacy in context and assessment. These findings imply that academics need and expect to collaboratively host workshops and conferences, deploy new technologies, acquire specific resources and teaching information literacy with their academic libraries. Besides the collaborative needs listed in Table 5, academics were asked to provide additional collaborative needs and expectations. An academic at MSU mentioned “collaborative research with some librarians” (Academic #44 MSU). This trend points to a positive mind-set among academics, which entails a requirement to partner in knowledge creation with some academic librarians. The findings of this study are supported by prior studies. Rolloff (2013) indicates that academic libraries should be a place to forge new ideas and engage academics in interactive educational workshops. In an African context, Mugwisi (2015), Fullard (2016), and Mohamed (2019) maintain that despite the negative perspectives on teaching, librarians have managed to collaborate with academics in teaching information literacy. Important to note is that collaborative demands made by academics in Zimbabwe have a positive influence on improving the quality of higher education; the academic library should pay attention to these demands.

Table 4. Collaboration support for academics (N = 136)

Collaboration requirements	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	LSU	MSU	LSU	MSU	LSU	MSU	LSU	MSU	LSU	MSU
	f %	f %	f %	f %	f %	f %	f %	f %	f %	f %
Co-hosting workshops and conferences	10 18	9 11	4782	63 80	0 0	0 0	0 0	7 9	0 0	0 0
Acquisition of specific resources	13 23	16 20	4477	63 80	0 0	0 0	0 0	0 0	0 0	0 0
Teaching information literacy	12 21	0 0	4579	63 80	0 0	0 0	0 0	16 20	0 0	0 0
Co-deploying new technologies	11 19	0 0	4681	66 84	0 0	0 0	0 0	13 16	0 0	0 0
Information literacy requests for students	13 23	11 14	4477	68 86	0 0	0 0	0 0	0 0	0 0	0 0

Conclusion and Recommendations

The findings of this study have revealed that modern academics in Zimbabwe expect their academic libraries to offer scholarly communication services (access to latest scholarly publications, research training, and information on research funding agencies, citation management tools, research software packages and institutional research output statistics). These are considered to assist academics in achieving their research endeavours. However, Zimbabwean academics were not yet receptive to RDM tools, as the service was fairly new. The study, therefore, recommends that academic libraries in Zimbabwe should offer all the required scholarly communication support as well as awareness and training in RDM tools, or risk being shunned by the 21st Century academic. To remain relevant in the current environment, academic libraries should assist academics to embrace the culture of effectively using social web tools for research. This is crucial since Zimbabwean academics require new pedagogical support such as online information literacy programmes on the use of new technologies. In order for Zimbabwean academics to carry out their teaching duties without being short-changed, academic libraries should offer updated teaching and learning software. Academics need to co-publish, co-deploy new technologies, co-teach information literacy and co-host workshops and conferences with their academic libraries. Fulfilling academics' collaborative demands may increase the visibility of the library and improve its image and value amongst academics. All expectations identified in this study are fundamental requirements for modern academics to adequately contribute towards the advancement of Zimbabwean higher education.

References

- Abduldayan, F.J., Dang, T.L., Karemani, A and Obadia, S. (2016). The Role of Academic Libraries in Enhancing Workflow in African Universities. In: International Conference on Information and Communication Technology and Its Applications (ICTA). Federal University of Technology, Minna, Nigeria. 28-30 November.
- ACRL. (2017). ACRL Scholarly Communication Toolkit. [Online]. [Http://Www.Acrl.Lib guides.Com/Scholcomm/Toolkit](http://www.acrl.org/libguides/com/scholcomm/toolkit) [Accessed 13 October 2018].
- Afebende, G. B., Ma, L. F. H., Mubarak, M., Torrens, A. F., Ferreira, S., Beasley, G., Chu, C. M. and Ford, B. J. (2016). A Pulse on the World of Academic Libraries: Six Regions and Six Insights. *College and Research Libraries News*, 77 (8), 389-395.
- Al-Majed, A., Al-Kathiri, F., Al-Ajmi, S and Al-Hamam, S. (2017). 21st Century Professional Skill Training Programs for Faculty Members: A Comparative Study between Virginia Tec University, American University and King Saud University. *Higher Education Studies*, 7 (3), 122- 131. Doi:10.5539/Hes.V7n3p122.
- Atkinson, J. (Ed.). (2018). Collaboration and Academic Libraries: An Overview and Literature Review. In: *Collaboration and the Academic Library: Internal and External, Local and Regional, National and International*. Cambridge: Chandos Publishing, pp. 11–33.
- Avdeeva, T. I., Kulik, A. D., Koseva, L. A., Zhilkina, T. A. And Belogurov, A. Y. (2017). Problems and Prospects of Higher Education System Development in Modern Society. *European Research Studies Journal*, 20 (4B), 112-124.
- Babbie, E.R. (2007). *The Practice of Social Research*. 11th Ed. Belmont, CA: Thomson Wadsworth.
- Bell, S. J. (2002). New Information Marketplace Competitors: Issues and Strategies for Academic Libraries. *Portal: Libraries and the Academy*, 2 (2), 277-303.
- Bell, S., Dempsey, L. and Fister, B. (2015). New Roles for the Road Ahead: Essays Commissioned For the ACRL'S 75th Anniversary. [Online]. www.ala.org/acrl/new_roles_75th.pdf [26 June 2018].
- Borrego, A. and Anglada, L. (2015). Faculty Information Behaviour in the Electronic Environment: Attitudes Towards Searching, Publishing and Libraries. *New Library World*, 117 (3/4), 173-185.

- Braddlee, D and Vanscoy, A. (2019). Bridging the Chasm: Faculty Support Roles for Academic Librarians in the Adoption of Open Educational Resources. *College and Research Libraries*, 80 (4), 426-464.
- Brochu, L and Burns, J. (2019). Librarians and Research Data Management: A Literature Review Commentary from a Senior Professional and a New Professional Librarian. *New Review of Academic Librarianship*, 25 (1), 49-58.
- Buwule, R.S and Mutula, S.M. (2017). Research Support Services to Small and Medium Enterprises by University Libraries in Uganda: An Entrepreneurial and Innovation Strategy. *South African Journal of Information Management*, 19 (1), 1-8.
- Chawinga, W. D. and Zinn, S. (2019). Global Perspectives of Research Data Sharing: A Systematic Literature Review. *Library and Information Science Research*, 41(2), 109-122.
- Chinyoka, A. and Mutambara, E. (2020). The Challenges of Revenue Generation in State Universities: The Case of Zimbabwe. *Cogent Social Sciences*, 6 (1), 1-10. [Online]. https://Invenio.Nusl.Cz/Record/403509/Files/Idr-1367_1_Paper.Pdf. [6 July 2020].
- Chisita, C. and Fombad, M. (2019). The Conundrum of Resource Sharing in Zimbabwe: Case of Academic Libraries. 16th International Federal Library Associations and Institutions Interlending and Document Supply Conference (ILDS) Conference. National Library of Technology. Prague, Czech Republic. 9-11 October 2019.
- Chiwere, E .R. T. and Becker, D. A. (2018). Research Data Management Services in Southern Africa: A Readiness Survey of Academic and Research Libraries. *African Journal of Library, Archives and Information Science*, 28 (1), 1-16.
- Cloete, N., Bailey, T., Pillay, P., Bunting, I. and Maassen, P. (2011). *Universities and Economic Development in Africa*. Wynberg: Centre for Higher Education Transformation.
- Cowan, S. and Eva, N. (2016). Changing Our Aim: Infiltrating Faculty with Information Literacy. *Communications in Information Literacy*, 10 (2), 163-177.
- Daniel, D. (2016). Journal Articles are the most widely used Information Resource for Research and Teaching in All Academic Disciplines. *Evidence Based Library and Information Practice*, 11 (3), 99-101.
- Echezona, R. I. and Chigbu, E. N. (2018). User Expectations and Innovative Strategies for Improved Patronage in University Libraries in Nigeria. *African Journal of Library, Archives And Information Science*, 28 (1), 93-105.
- Fatkullina, F., Morozkina, E. And Suleimanova, A. (2015). Modern Higher Education: Problems and Perspectives. *Procedia: Social and Behavioural Sciences*, 214: 571-577.
- Fullan, M. And Langworthy, M. (2014). *A Rich Seam: How New Pedagogies Find Deep Learning*. London: Pearson.
- Fullard, A. (2016). Using the ACRL Framework for Information Literacy to Foster Teaching And Learning Partnerships. *South African Journal of Libraries and Information Science*, 82 (2), 46-56.
- Georgia Technology Library Strategic Plan 2013-2016. (2013). Defining the 21st Century Technological Research Library. Georgia Institute of Technology Library. Strategic Objectives 2013 -2016. [Online]. <https://Smartech.Gatech.Edu/Bitstream/Handle/1853/49353/Library%20and%20InformaTion%20Center%20Strategic%20Plan,%202013-2016.Pdf?Sequence=1> [Accessed 13 October 2018].
- Hallam, G., Thomas, A. and Beach, B. (2018). Creating a Connected Future through Information and Digital Literacy: Strategic Directions at the University of Queensland Library. *Journal of The Australian Library and Information Association*, 67 (1), 42-54.
- Hills, C. (2016). Meeting Community Needs: A Practical Guide for Librarians (Practical Guides for Librarians, No. 21). *The Australian Library Journal*, 65 (4), 328-328.

- Internet World Stats. (2011). Usage and Population Statistics: Growing Internet Use and ICT in Zimbabwe.[Online]. <https://www.internetworldstats.com/af/zw.htm> [Accessed 18 October 2018].
- Jaguszewski, J. M. and Williams, K. (2013). *New Roles for New Times: Transforming Liaison Roles in Research Libraries*. Washington: Association of Research Libraries.
- Jain, P. and Akakandelwa, A. (2016). Challenges of Twenty-First Century Academic Libraries in Africa. *African Journal of Library, Archives and Information Science*, 26 (2), 145-153.
- Jaring, P. and Bäck, A. (2017). How Researchers Use Social Media to Promote their Research and Network with Industry. *Technology Innovation Management Review*, 7 (8), 32-39.
- Joubert, M and Costas, R. (2019). Getting to Know Science Tweeters: A Pilot Analysis of South African Twitter Uses, Tweeting About Research Articles. *Journal of Altmetrics*. 2 (1), 2-15.
- Kasalu, J.S. and Ojiambo, J. B. (2015). Enhancing Access to Electronic Resources Through Collaborations and E-Document Delivery: Experiences of University Libraries in Kenya. In: 81st General Conference International Federal Library Associations and Institutions, World Library Information Congress, Cape Town. 15-21 June 2015.
- Kiran, K. (2010). Service Quality and Customer Satisfaction in Academic Libraries: Perspectives From a Malaysian University. *Library Review*, 59 (4), 261-173.
- Klain-Gabbay, L. and Shoham, S. (2019a). Scholarly Communication and the Academic Library: Perceptions and Recent Developments. In: Berea, a (Ed.). *A Complex Systems Perspective of Communication from Cells to Societies*, Intechopen. [Online].
<https://www.intechopen.com/books/a-complex-systems-perspective-of-communication-from-cells-to-societies/scholarly-communication-and-the-academic-library-perceptions-and-recent-developments>. [Accessed 9 July 2020]. DOI: 10.5772/Intechopen.82075
- Klain-Gabbay, L. and Shoham, S. (2019b). The Role of Academic Libraries in Research and Teaching. *Journal of Librarianship and Information Science*, 51(3), 721-731.
- Krejcie, R. V and Morgan, D.W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30(3), 607-610.
- LIBER. (2017). Implementing FAIR Data Principles: The Role Libraries. [Online].<https://libereurope.eu/wp-content/uploads/2017/12/liber-fair-data.pdf> [Accessed 30 June 2020]
- Lupane State University. Who We Are, Where we are from and where we are going. (2020). [Online] <http://www.lsu.ac.zw/aboutus/index.html#:~:text=lupane%20state%20university%20the%20university,Agricultural%20Sciences%20in%20August%202005>. [Accessed 27 June 2020]
- Mabweazara, R. M And Zinn, S. (2016). Assessing the Appropriation of Social Media by Academic Librarians in South Africa and Zimbabwe. *South African Journal of Libraries and Information Science*, 82(1), 1-12.
- Majoni, C. (2014). Challenges Facing Universities in Zimbabwe. *Greener Journal of Education and Training Studies*, 2(1), 20-24.
- Mathuews, K. and Harper, D. (2018). One Size Does Not Fit All: Maintaining Relevancy in the Modern Makerspace Movement. *College and Research Libraries News*, 79 (7), 358-359.
- Matthews, D. (2018). If You Love Research, Academia may not be for you. Times Higher Education. [Online].
<https://www.timeshighereducation.com/blog/if-you-love-research-academia-may-not-be-you> [Accessed 26 June 2018].
- Mawere, T and Sai, K. (2018). An Investigation on E-Resource Utilisation among University Students Developing Country: A Case of Great Zimbabwe University. *South African Journal of in a Information Management*, 20 (1), 1-7.

- Midlands State University. (2020). Historical Note. [Online] <https://ww5.msu.ac.zw/about/#:~:text=historical%20note,lost%20its%20bid%20to%20bulawayo> [Accessed 27 June 2020].
- Mohamed, S. (2019). A Critical Praxis in the Information Literacy Education Classroom Using The ACRL Framework for Information Literacy for Higher Education. In *Communications in Computer and Information Science*, Ed. Serap Kurbanođlu. Cham: Springer Nature, pp. 506–521.
- Mugwisi, T. (2015). Role of Librarians in Teaching Information Literacy in Zimbabwe and South African Universities: A Comparative Study. *Mousaion*, 33 (1), 23-42.
- Mushemeza, E. D. (2016). Opportunities and Challenges of Academic Staff in Higher Education in Africa. *International Journal of Higher Education*, 5 (3), 236-246.
- National Academies of Sciences, Engineering and Medicine. (2019). *Adapting To the 21st Century Innovation Environment: Proceedings of a Workshop – In Brief*. Washington, DC: The National Academies Press.
- Ngibe, M. And Lekhaya, L. M. (2016). Perceptions of Research Structures and Service Quality within Various Faculties at DUT: Staff and Students Perspectives. *Problems and Perspectives in Management*, 14 (1), 63-71.
- Ocholla, L., Mutsvunguma, G and Hadebe, Z. (2016). The Impact of New Information Services on Teaching, Learning and Research at University of Zululand Library. *South African Journal of Libraries and Information Science*, 82 (2), 11-19.
- Onyancha, O. B. (2015). Social Media and Research: An Assessment of the Coverage of South African Universities in Researchgate, Web of Science and Webometrics Ranking of World Universities. *South African Journal of Libraries and Information Science*, 81 (1), 1-13.
- Onyancha, O. B. (2018). Navigating the Rising Metrics Tide in the 21st Century: Which Way for Academic Librarians in Support of Researchers in Sub-Saharan Africa? *South African Journal of Libraries and Information Science*, 84 (2), 1-13.
- Pham, H. T. and Tanner, K. (2015). Collaboration between Academics and Library Staff: A Structurationist Perspective. *Australian Academic and Research Libraries*, 46 (1), 2-18.
- Pinfield, S., Cox, A. M. And Rutter, S. (2017). Mapping the Future of Academic Libraries: A Report for Society of College, National and University Libraries (SCONUL). [Online]. [Http://Sconul.Ac.Uk/Sites/Default/Files/Documents/SCONUL%20Report%20Mapping%20the%20Future%20of%20Academic%20Libraries.Pdf](http://sconul.ac.uk/sites/default/files/documents/sconul%20report%20mapping%20the%20future%20of%20academic%20libraries.pdf). [Accessed 16 October 2018].
- Pinfield, S., Cox, A. M. and Smith, J. (2014). Research Data Management and Libraries: Relationships, Activities, Drivers and Influencers. *Plos ONE*, 9 (12), 1-28.
- Pontika, N. (2019). Roles and Jobs in the Open Research Scholarly Communications Environment: Analysing Job Descriptions to Predict Future Trends. *LIBER Quarterly*, 29 (1), 1-20.
- Raju, R. (2018). From Life Support to Collaborative Partnership: A Local/Global View for Academic Libraries in South Africa. *College and Research Libraries News*, 79 (1), 30-33.
- Renwick, S., winter, M. and Gill, M. (2017). Managing Research Data at an Academic Library in a Developing Country. *International Federation of Library Associations and Institutions Journal*, 43 (1), 51-64.
- Research Libraries UK. (2011). The Value of Libraries for Research and Researchers. UK: Research Information Network and Research Libraries UK. [Online]. <http://content/uploads/2014/02/value-of-libraries-report.pdf> [Accessed 9 July 2020].
- Rolloff, E. K. (2013). We're Engaged: A Community-University Library Collaboration. *Metropolitan Universities*, 24 (3), 20-35.

Tang, R and Hu, Z. (2019). Providing Research Data Management Services in Libraries: Preparedness, Roles, Challenges and Training for RDM Practice. *Data and Information Management*, 3 (2), 84-101.

Thomas, D and Saib, M. (2013). Collaboration between Academics and Librarians: The Case of the Durban University of Technology. Proceedings of the International Association of Science and Technological University Libraries Conference, Cape Town, South Africa. 15-18 April 2013 [Online]

[Http://Docs.Lib.Purdue.Edu/Iatul/2013/](http://docs.lib.purdue.edu/iatul/2013/). [Accessed 9 July 2020]

Tshuma, T. and Chigada, J. (2018). Analysing Information Literacy Practices at Selected Academic Libraries in Zimbabwe. *South African Journal of Information Management*, 20 (1), 1-7.

Unal, Y., Chowdhury, G., Kurbanoglu, S., Boustany, J. and Walton, G. (2019). Research Data Management and Data Sharing Behaviour of University Researchers. *Information Research*, 24 (1). In: Proceedings of ISIC: The Information Behaviour Conference, Krakow, Poland, 9-11 October, 2018: Part 2. [Online]. <http://informationr.net/ir/24-1/isic2018/isic1818.html>

[Accessed 6 July 2020].

Wang, K and Zhu, C. (2019). MOOC-Based Flipped Learning in Higher Education: Students' Participation, Experience and Learning Performance. *International Journal of Educational Technology in Higher Education*, 16 (1), 33-50.

Wilkinson, F and Lubas, R. (2016). Practical Strategies for Academic Library Managers: Leading With vision through all levels. 1st Edition. Santa Barbara, Calif.: Libraries Unlimited.

Young, S.W.H., Choo, Z and Chandler, A. (2020). User Experience Methods and Maturity in Academic Libraries. *Information Technology and Libraries*, 39 (1), 1-31.

Dr. Rangarirai Moira Mabwezara is a lecturer in the Department of Library and Information Science at the University of Western Cape, South Africa.



Sandy Zinn is an Associate Professor in the Department of Library and Information Science University of the Western Cape, Cape Town, South Africa. Her research interests include School Libraries; E-learning; Information Literacy; Information Behaviour; Research Data Management; and Social Media in LIS.



