

# Chapter Three

## Research Support Services in Academic Libraries in Uganda: Challenges and Opportunities

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### **Abstract**

*Academic libraries support research by developing research collections and data repositories, and providing bibliometric analysis, data literacy training and research data management. This chapter seeks to examine the challenges and opportunities associated with the provision of research support services in academic libraries in Uganda. The study complements surveys of emerging practice from developed countries. A survey was conducted among librarians of the Consortium of Uganda University Libraries (CUUL). The findings revealed varying levels of engagement with different types of research support services offered across the consortium. Numerous challenges affect the provision of research support services. The chapter recommends lobbying key stakeholders to support research. Although this study is limited in scope, it nevertheless offers insights into the nature and scope of the research support services provided by CUUL member institutions.*

**Keywords:** academic libraries; research support; bibliometrics; research data management; Uganda

## Introduction

The development of libraries in Uganda is associated with the colonial government. According to the International Network for the Availability of Scientific Publications (INASP 2000) the public library sector in Uganda was established in 1940, with the aim of providing information to a minority elite. Recognising that information is a vital resource for decision making, however, the government of Uganda has taken significant steps to improve access to information by recommending that one percent of the Gross Domestic Product is dedicated to research and development activities. This provision has transformed libraries into instruments of learning with the aim of eradicating illiteracy and inequality, hence promoting social cohesion.

The National Development Plan (NDP) for the period 2010/11 to 2014/15 places great emphasis on strengthening science, technology and innovation (STI). The plan promotes increased research and scientific innovation support through capitalisation of the STI Fund. The main mandate of higher education libraries is to facilitate access to information that meets the teaching, learning and research information needs of institutions. Research is the major activity of academic institutions of higher learning. Therefore, institutions in Uganda are required to allocate ten percent of the university budget to research. However, few universities have met this standard according to the National Council for Higher Education (NCHE). Public universities are heavily involved in conducting research while few private universities conduct research. Some of the challenges pointed out include: a persistent high staff student ratio of 1:24; an increased number of part time lecturers; inadequate resources, and heavy dependency on donor funding for research and publications (NCHE 2010). To address this challenge, the Ministry of Education and Sports has set up a fund for research and the training of staff in public universities, channelled through NCHE (2013).

Technological advances have caused academic libraries to modify their services and resources. New services are emerging in order to meet the informational needs of their users. Collaboration has been recognised as one of the strategies to cope with challenges such as: high costs of digital resources; users' changing needs and expectations; the need for information and communication technology (ICT) competencies and provision of the requisite infrastructure (Kinengyere 2007; Musoke 2008). Owing to budgetary constraints and inadequate resources, university libraries in Uganda decided to collaborate and hence the Consortium of Uganda University Libraries (CUUL) was established. CUUL undertakes the negotiation and licencing of e-resources, capacity building, resource mobilisation and advocacy for university libraries in Uganda.

Academic libraries are the pillars on which research in universities is based, providing a wide range of resources and services. Success in research is a major indicator of university performance hence universities are increasingly interested in how they can improve their competitive position by increasing their research output. In addressing this goal research support services in Ugandan academic libraries are of vital importance. It is not an overstatement to assert that academic libraries are the backbone of research and academic excellence in universities. A study by Ikoja-Odongo (2003) reported that politicians obtain information from libraries for both democratic and accountable governance. Rugambwa and Kintu (2013) found out that the availability of library and research resources at the parliamentary library are vital for legislators to perform their representative, oversight and legislative functions effectively. Mwesigwa (2013) reported that academic libraries in Uganda are involved in civic literacy through outreach programmes aimed at creating an informed citizenry.

## Purpose and objectives

The chapter documents the nature and scope of research support services in academic libraries in Uganda. It provides examples of good practice,

recommends areas where new practices might emerge, as well as possible areas for collaboration among CUUL member institutions.

The study objectives were to: establish the existing research support services; examine challenges experienced in supporting research services, and identify opportunities exist for the improvement of research support services. Hence the research questions for the study were:

1. What research support services are offered or planned to be offered in the academic libraries in Uganda?
2. What challenges are experienced in providing research support services in academic libraries in Uganda?
3. What opportunities exist for improving research support services in academic libraries in Uganda?

### **Literature review**

A review of the relevant literature revealed that scholarly research has undergone radical transformation which is affecting research practices. Technology, library space and design, and dynamic user services have emerged as strong drivers for change in academic libraries. Studies of library support services have been conducted in developed countries, but limited investigation of the situation has been undertaken in the developing countries.

Research support as defined by Parker (2012) is a set of services and facilities which assist in increasing research productivity and scholarship. Borgman (2010) observed that the role of libraries is changing from a provider of reader services to author services due to technological, political, economic and social changes in higher education. This means a shift in the role of the librarian from a supporter of the research process to a contributor to the process. Raju and Schoombee (2013) argued that research support is the proactive engagement of the librarian with the researcher throughout the research process.

Libraries in the developed world are adapting library practices to meet the research needs of their communities through academic liaison, collection development, information literacy (IL) and repository management (Kroll & Forsman 2010; Corral 2012). Walker (2009) emphasised the role of academic libraries in providing new research services such as: research data management; management of institutional repositories, and the provision of information technology (IT) services. Kesselman and Watstein (2009) noted that librarians have taken on new roles in areas of integrated IL instruction and scholarly communication in order to meet the ever changing needs of their users.

To enable libraries to offer these research support services, a new set of skills is required by academic librarians. Auckland (2012) identified a range of skills required by librarians to support the process of scholarship including: bibliometric analysis, digital curation and data mining. Sinclair (2009) envisages a 'blended librarian' who possesses both traditional and IT skills to be able to address users' needs in the 21<sup>st</sup> century. The redesigning of library spaces is one of the new trends in academic libraries (Pennington 2012). Libraries are repurposing their spaces in order to encourage collaborative learning and research.

The study reported in this chapter sought to generate insights about research support services from the context of the developing world. The results of the study can inform the design of education and training programmes for the current and future library workforce in Uganda.

This chapter does not encompass all the traditional roles of academic libraries such as selection, cataloguing, circulation, course support et cetera, but focuses on research support services in the academic libraries in Uganda.

### **Methodology**

The study comprised a case study using a mixed methods approach. This approach involv

Table 1: Responses by type of institution and CUUL membership

Type of institution	Ugandan universities	CUUL members	Number of responses	%
Public Universities	9	6	6	37.5
Private Universities	30	25	10	62.5
Total	39	31	16	00

-ed data using methods that are drawn from both quantitative and qualitative in nature (Creswell 2003). Gorman and Clayton (2005) define a case study as an investigation of an 'entity on the assumption that it is possible to derive knowledge of the wider phenomenon from intensive investigation of a specific instance or case'.

Research support is a new service area for academic libraries in the developing countries. Therefore, a review of literature was undertaken to establish new trends, roles and responsibilities for academic libraries. A literature review enables the researchers to sharpen the focus of the study (Fouche & Delport 2012).

The CUUL member institutions, both public and private, were identified through the membership lists available on the CUUL website (<http://www.cuul.or.ug>). Librarians responsible for research services in each library were identified and e-mail messages outlining the objectives of the study and containing a link to the web-based survey instrument were addressed to the contacts who were identified personally to maximise the response rate.

A structured online survey questionnaire, designed using Google Forms, was sent to CUUL member institutions. In March 2015, invitations together with the survey link were sent to all University Librarians of CUUL member institutions. The instrument contained ten open ended questions organised in four main sections, covering demographic information, research support services, challenges and future plans.

A reminder was sent in April 2015 and the survey was closed in June. Of the 31 copies of the questionnaire sent out, 16 were completed and returned, a response rate of 52%. Respondents from public universities constituted six (37.5%),

of the total number of responses and ten (62.5%), were from private universities (Table 1). This breakdown is representative of the CUUL membership. Results from the survey were analysed using Google analytics.

Respondents represented their institutions rather than themselves as individuals. Therefore, the unit of analysis was academic libraries and the responses demonstrated the various research support activities and plans for the future as a whole. The review of literature about research support services and the case study of CUUL provided sufficient evidence to draw conclusions and make recommendations on emerging research support services in academic libraries in Uganda.

## Findings

The findings revealed varied levels of engagement with different types of research support services currently offered or planned to be offered by the type of institution. Currently, institutions are offering: collection development; selective dissemination of information (SDI) current awareness services (CAS); IL training and open access (OA) publishing. However, new services are emerging in response to technological, political, economic and social changes in the operating environment such as bibliometrics and systematic review. There is evidence of plans for future service developments related to research support and provision of guidance on handling research data.

### *Demographic characteristics of respondents*

In terms of gender, male respondents constituted 44% while 56% were females. In terms of academic qualifications, six percent had a PhD,

56% had a masters and 38% had bachelor's degrees. This shows that academic libraries have staff with professional qualifications who can ably support research if they are given further education and training in the new technologies and their application.

### **Collection development**

Researchers and lecturers are directly involved in the selection of research collections through the provision of reading lists. Librarians compile the reading lists taking into consideration the latest editions as well as the formats. Findings revealed that 15 (94%) of academic libraries are actively engaged in developing research collections while one (six percent) indicated that it rarely engages in collection development due to budgetary constraints. Jubb and Green (2007) argued that academic libraries play a critical role in supporting research in all subjects and disciplines within their host universities or colleges by developing collections. Through CUUL, academic libraries in Uganda have been able to diversify their collections by subscribing to electronic books and journals in order to support research. As rightly observed by Shuling (2007), electronic information has gradually become a major resource in academic libraries in order to support teaching, learning and research.

### **Document delivery services**

Universities in Uganda can access scholarly content from the development partners such as: Tufts University; the University of Tennessee, Knoxville; University of Bergen Library, and the British Library. The aim of the collaboration is to ensure that library users who fail to access full-text articles can order for the articles through the document delivery services (DDS). Findings indicated that 14 (87.5%) respondents provide DDS to researchers while two (12.5%) do not.

### **The electronic gateway to information**

ICT enables researchers to search and retrieve information effectively and efficiently. Mostafa (2005) observed that libraries provide computers

and internet access to allow people to search for information online. Results showed that 53% of the respondents provide technical infrastructure to enable researchers to access information. However, 47% still feel that the available infrastructure is inadequate to fully support the researchers. Findings also revealed that 88% of academic libraries provide researchers with both manual and online tools for searching and retrieving information while 12% do not. Examples of web tools include LibHub/Kiox which is a single interface used to discover and access electronic resources which CUUL subscribes to; the online public access catalogue (OPAC), and reference management tools, indexes, guides and manuals.

### **Open access publishing**

Academic libraries in Uganda provide gold route publishing through the institutional repositories (IRs). Westell (2006) defined an IR as, 'a digital research archive; an accessible collection of scholarly work that represents the intellectual capital of an institution'. Chan (2004) observed that the primary mission of institutions of higher learning is to create, share, and disseminate knowledge. Survey findings revealed that 66% of academic libraries have set up IRs while 34% have future plans of setting up IRs. Park and Shim (2011) pointed out that several libraries have launched library publishing services to support scholarly communication dissemination. IRs provides access to scholarly material without the economic barriers that currently exist in scholarly publishing. Ngulube (2007) expressed the view that researchers use research findings to generate further research and models, thus the need to provide access to such works. This view is supported by Rumsey (2006) who argued that IRs open up new forms of scholarly communication for both short-term and long-term accessibility. Similarly, Parker (2012) pointed out that IRs provide equitable access to scholarly literature.

### **Selective dissemination of information**

Researchers need to keep up-to-date with the

latest results of work in their field as well as obtaining a detailed retrospective review of what has been achieved to date in a particular field before embarking on new research. SDI services aim at keeping researchers updated and this is done manually or electronically. Manually, librarians select information of particular interest to researchers in a particular field and disseminate it. Electronically, a regular alerting service on selected subjects, defined by the user, to newly published reports, journal articles, patents and other documents which have a high probability of interest to the user is set up. Survey data shows that 50% of the respondents provide SDI through e-mails while 50% rarely provide SDI services.

### ***Current awareness services***

The process of providing CASs in academic libraries has been re-emphasised by the advent of ICTs. Social media has equally played a critical role in enhancing communication between libraries and the researchers. To this end, libraries have created websites, Facebook and Twitter pages, and blogs in order to serve researchers better. Lists of electronic resources and databases are periodically distributed to the researchers on the staff listserv. Promotional materials from publishers are equally distributed to the researchers in order to keep them informed of new resources and services. Survey findings indicated that 56% of the respondents provide CAS regularly while 44% rarely such a service. Academic libraries provide services such as: e-mail notices of current journal tables of contents with links to available full-text; subject-specific journal databases; e-print repositories, and e-mail alerts of forthcoming articles and newly received books.

### ***Information literacy programmes***

In order to strengthen information gathering and retrieval by the researchers, academic libraries offer IL training. Survey findings indicated that 69% of academic libraries provide instruction programmes while 31% are planning to provide such training programmes. Libraries are partner-

ing with the Directorate of Research and Graduate Training to conduct cross-cutting courses such as: Research Management, Scholarly Writing and Communication Skills, Information Competence and Management in order to address gaps in the research process. During the training, researchers are introduced to reference management tools such as Endnote, Mendeley and Zotero. In addition, researchers are introduced to open source tools for online storage and sharing documents like: Dropbox, Google Drive, Research Gate and Academia. LibGuides address issues such as the research process, scholarly publishing, critical and analytical skills, and OA publishing.

INASP, in partnership with CUUL, has been involved in building the capacity of librarians to deliver IL training as well as integrating IL into the curricula. Digital literacy is one aspect of the IL programme which relates to knowledge, skills, attitudes and behaviour in the use of a wide range of digital devices such as smartphones, iPads, laptops; all of which are seen as a network (Warschauer & Matuchniak 2010). Different scholars (Tise 2004; Wilson & Briscoe 2004) have argued that IL is one of the essential competencies if nations are to prosper. Mukungu (2011) recommended that NCHC should make it compulsory for all universities in Uganda to incorporate IL programmes into the curricula in order to cater for the development needs of Uganda.

### ***Dedicated research spaces in academic libraries***

Research Commons provide flexible technology-enabled space for researchers to collaborate. A study by Ilako & Ikoja-Odongo (2011) identified research commons as one of the creative and innovative ways in which some academic libraries in Uganda are supporting research. Only 38% of academic libraries have developed specialised space facilities such as a research commons to foster communities of shared interest on campus. The majority (62%) are planning to provide such facilities in future in order to support research.

### **New research support services**

Two types of new support services were offered:

**Bibliometrics.** Current levels of activity in the area of bibliometrics seem to be relatively low in academic libraries in Uganda. According to the current study findings only Makerere University Library offers bibliometric services. With this service the following analytical studies are carried out: citation analysis; journal impact factor (JIF); bibliometric and multifaceted bibliometric analysis, and institutional research output analysis. In addition, training in bibliometrics, JIF, author level metrics, and OA are conducted for researchers. Other institutions are planning to develop these particular services in order to support research.

**Systematic reviews.** Partnering with researchers to conduct systematic reviews is one area librarians in academic libraries are keen to develop. Findings of the survey indicated that some six percent of academic libraries are involved in systematic reviews while the majority (94%) are planning to develop such a service. At the College of Health Sciences, Makerere University, librarians are involved in developing search strategies which inform the systematic review process. Librarians have been able to co-author publications with other researchers. A study by Jubb (2011) reported that researchers value the contribution of specialist librarians in the research process. Therefore, librarians need to work towards building further research partnerships.

### **Challenges**

The study identified a number of challenges that constrain research support service provision by academic libraries in Uganda. A detailed description of challenges is provided in the sections below.

**Budgetary constraints.** Library budgetary cuts, coupled with the inflationary cost of resources, have hindered research support services in academic libraries. According to NCHE (2013), institutions are expected to allocate ten percent

of the university budget to research. However, few universities have met this standard. Musoke (2008) attributed the inadequate funding of libraries to a limited appreciation of the role of libraries in higher education by the university management and other political leaders. Kasozi (2009), however, suggested a diversified funding model, based on autonomy and accountability, as a solution to the problem of funding. The model involves multiple sources including government, education insurance, a national education lottery, endowments, a national loan scheme, fees, scholarships, and income generating activities within universities and other tertiary institutions.

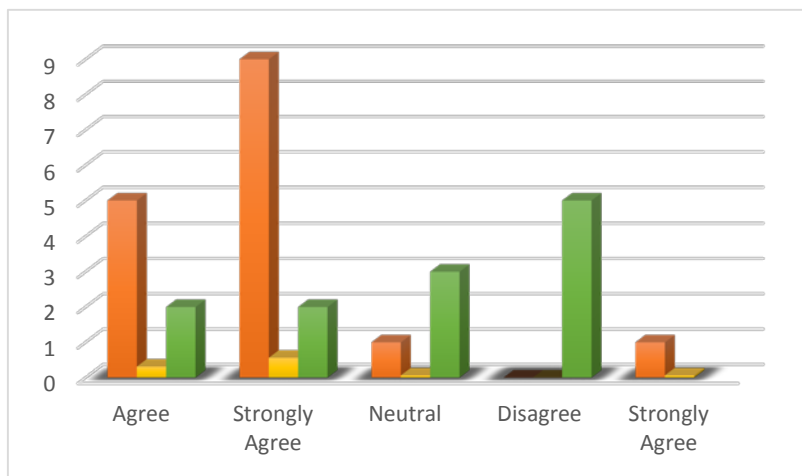
**Inadequate bandwidth and power fluctuations.** Asked whether they agreed that inadequate bandwidth and power fluctuations were a deterrent to accessing research collections the majority (73%) of academic libraries indicated that inadequate bandwidth was a deterrent. The slow connectivity frustrates researchers while accessing resources and hampers the training of researchers. This greatly compromises the libraries' capacity to provide research support services. Although some institutions have standby generators, the cost of fuel for the generators is yet another challenge. Table 2 reflects libraries' responses in a Likert scale.

**Inadequate technological infrastructure.** Research support services are hindered by inadequate ICT infrastructure as illustrated in Figure 1. The majority of the respondents (87.9%) agreed and strongly agreed that inadequate infrastructure is a major challenge to providing research support services including: data storage, tools for data analysis and support for virtual communities. This finding is consistent with a study conducted by NCHE (2010) which revealed that higher education in Uganda is experiencing infrastructure challenges. However, Musisi (2003) attributes the inadequate physical infrastructure to the past political turmoil and a general lack of

Table 2: Bandwidth and power fluctuations

Response	Bandwidth (%)	Power outages (%)
Agree	25	43.8
Strongly agree	50	18.8
Neutral	12.5	18.8
Disagree	12.5	12.5
Strongly Disagree	-	6.3

Figure 1: Inadequate technological infrastructure



a culture of valuing the maintenance of physical infrastructure.

**Inadequate ICT skills.** The majority of the librarians' expertise is limited to mostly traditional materials. Research data services and bibliometrics services are relatively new skills that librarians need and do not possess. Identifying and collecting data and data sets to include in repositories requires IT skills. Scholars (Mahmood 2003; Ameen 2006; Rehman 2008) have argued that, the problem of inadequate skills originates in library schools that produce graduates who are insufficiently skilled. Newton, Miller, and Bracke (2011) emphasised that librarians would be in a better position to develop scientific data collections for universities if they possessed additional skills in data management.

### **Opportunities**

Strengthening the existing collaborative partnerships and networks is a sure strategy towards improving research support services in Ugandan academic libraries. Through the consortium arrangement, academic libraries can work together in order to support research. Various donor agencies such as Swedish Development Agency (Sida) and Electronic Information for Librarians (EIFL) have been instrumental in supporting research in academic libraries through e-resources subscriptions, capacity building, and OA publishing.

The Uganda Tertiary and Other Institutions Act, 2000 designates university librarians and other librarians as academic. The university librarian is a member of university management. This status gives librarians an opportunity to collaborate with researchers and to lobby for the library



to be recognised as the centre for research data management services.

Changes in ICT provide opportunities for academic libraries to reposition themselves to serve the evolving needs of researchers through the provision of search tools and digital repositories, and the organisation and support of scholarly communication within and across higher education institutions in Uganda. There is need to design flexible services, including online tutorials, and off-campus access or SMS messaging, around those parts of the research process that cause researchers frustration.

The application of web tools provides an array of advantages. Technologies such as synchronous communication provide academic libraries a platform for real-time communication. Libraries should enable their users to subscribe to updates on new items in a collection, new services, and new content from the library's databases.

### **Implications**

This chapter suggests a need to for academic libraries to harness the opportunities presented by recent technological advances including: social media such as blogging, Twitter, Facebook, and YouTube, to consolidate research support service efforts. Librarians ought to find ways to demonstrate to researchers, students, academic staff and the university administration the value of library services and resources to scholarship, while providing services that may seem invisible and seamless to researchers.

Library staff need to be trained in the area of data curation and data management services. In addition, continuous professional development is necessary to enable library staff to attain the required skills and qualifications to perform their duties. This finding is in line with Sinclair's (2009) suggestion of a 'blended librarian', who combines both the traditional librarianship skills with new hardware and software skills. Librarians will become increasingly important as navigational guides; linking users to a wide range of digital resources, and helping them make choices among materials available in the public domain on the

Internet.

Academic libraries need to recognise the new e-science environment thus build a new profile in their research community. This can be achieved by creating new research data services that expand the role of the library or strengthening the existing profile by extending traditional services into the new environment.

Librarian-faculty partnerships need to be created and developed in order to support research. Data literacy instruction provides great opportunities for librarians to develop such partnerships through the provision of embedded IL courses. Researchers need to be sensitised about data management services as well as the promoting of the sharing of data sets for the continuation of research.

Funding is critical for the development and management of research support services. Librarians need to lobby for more funding from government and engage in writing grant winning proposals in order to acquire the requisite ICT infrastructure.

For LIS graduates to remain relevant to the current market, they need to have new specialised skills (Ameen 2011) in addition to the traditional ones. Library and information science (LIS) schools have the potential to redesign their curricula in order to produce graduates with the necessary skills to match the expectations of the market.

In terms of staffing, academic libraries need to create the position of a data librarian to spearhead the RDMS initiatives in the library.

### **Conclusions**

The findings reported in this paper have provided some insights into research support services in Uganda, including the constraints, opportunities and implications for policy and practice. Academic libraries in Uganda still provide traditional research support services, hence the need to diversity and update their services. The chapter challenges LIS educators to plan and design education and development programmes to meet the needs of both new professionals and

existing practitioners. Academic libraries need to take interest in all aspects of scholarly activity by engaging in data curation and preservation of research outputs.

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