Capacity Building Initiatives for Universities Library Professionals: A Case Study of Consortium of Tanzania University and Research Libraries (COTUL)

Sayuni Harun Ntullo [1]
(1) Librarian, Directorate of Library Services, Tanzania Institute of Accountancy, Tanzania
&
(1) Research Scholar, Department of Library and Information Science, University of Lucknow, India
sayunintullo1@gmail.com

Prof. Babita Jaiswal [2]
(2) Professor, Department of Library and Information Science, University of Lucknow, India
drbabitajaiswal@gmail.com

Abstract
Consortium of Tanzania University and Research Libraries (COTUL) is a coordinated network of academic libraries in Tanzania which aims to offer services in a coordinated manner, access to online resources, and professional trainings for librarians to enhance services in the digital era. This research paper examined how the capacity building programs by COTUL influenced the professional skills, library services and relevance of the librarians in academic institutions. It also explored issues that confront the continuous professional development of academic librarians, how they have been tackled, and the significance of such programs for helping academic librarians fulfill their changing roles in a rapidly changing digital environment. Data was collected through a mixed method comprising of both surveys and interviews from 10 University libraries in Tanzania with a total of 120 library staff. The results showed that the training and capacity building programmes of COTUL helped the librarians to perform their duties better, especially in providing customers with services and supporting academic and research activities. Nevertheless, university libraries still encounter challenges to achieve constant professional growth and meet all demands of the digital transformation. The study findings indicate that COTUL has a significant role to play in enhancing competencies of librarians and the academic library services in Tanzania. However, there are still some obstacles to the effectiveness of continuous professional development (CPD) in the digital era. The authors suggest increased cooperation amongst the member institutions to overcome the challenges, build capacity, develop library services and boost student academic achievement.

Keywords: Consortium of Tanzania University and Research Libraries, Library Consortia, Capacity Building, University Libraries, Professional Skills, Tanzania

Introduction

Contemporary consortia achieve their goals through dedicated electronic content subscriptions, but the earlier versions mainly provided printed book sharing capabilities. The establishment of E-resources subscription will increase member libraries' access to resources promoting their utilization and educational opportunities. (Muneja et al., 2023) confirms that most libraries cannot afford the platform needed to get inclusive materials and thus consortia formation ensures maximum information access. Libraries that collaborate through consortium provide mutual training and development opportunities for staff personnel which leads to improved service quality for their users.

In recent years, the consortium has grown to include 76 registered member libraries (COTUL, 2020), reflecting its increasing importance in the Tanzanian academic landscape (Tandika, 2020). An important aspect of COTUL's mission is its commitment to training librarians and researchers in essential information access and retrieval skills. These training programs equip participants with the necessary tools and techniques to efficiently locate and utilize available resources. By improving the information literacy skills of librarians and researchers, COTUL significantly contributes to enhancing the overall research capacity within Universities in Tanzania. Such capacity building is essential, as it

empowers Institutions to leverage available resources effectively and supports the development of a robust research culture in the Country (Wabule, 2019).

Statement of problem

Empirical research in Tanzania proves that library professionals still experience serious problems such as the lack of sufficient ICT skills and awareness of the existence of electronic resources and the opportunity to improve their professional development (Msuya and Mungwabi, 2016). Regardless of the fact that Consortium of Tanzania University and Research Libraries (COTUL) has put in place several capacity-building and resource-sharing projects that have enhanced access to access information and library services, mainly concentrate on short term or operational results. Not much empirical evidence has been done to evaluate the long-term and sustained effects of such interventions on the professional competencies of librarians and their career development hence the necessity to conduct more research.

It is important to understand how COTUL's capacity building campaigns have changed the capabilities, work performance, and overall usefulness of university library professionals. It will further discuss the problems librarians encounter, the benefits these programs seem to offer, and how much they coincide with the new tasks and duties of librarians in the digital world.

Research Objectives

1. To establish capacity building initiatives undertaken by COTUL in strengthening the universities library professionals
2. To assess the effectiveness of COTUL's capacity building initiatives in strengthening the skills and competencies of universities library professionals.
3. To ascertain skills acquired by respondents through consortium capacity building programs.
4. To investigate challenges faced by librarians in the implementation of capacity building programs
5. To offer suggestions for the consortium to enhance cooperation and promote capacity building

Scope and Limitations

This study focused on ten (10) selected Universities in Tanzania out of (76) member institutions of COTUL (COTUL, 2020), particularly those the most active, which may fully represent the diversity of Institutions involved in the consortium. Therefore, the findings may not be universally applicable to all academic libraries across the country.

Review of Related Literature

Academic and research libraries are organizations that come together to build cooperative information systems. COTUL started operations in 2008 to build electronic information access as well as promote research and training capabilities. To attain academic excellence (Mwanjala, 2020), COTUL undertakes many educational research activities in addition to providing consultancy services among member Institutions. COTUL Member Institutions benefit from the consortium joints operations which facilitate combined resources subscription and access, as well as sharing intellectual content and information to enhance Tanzania's information infrastructure. As the information needs of academics and researchers have increased, strategic library alliances are becoming more important for organizations to co-operate and work together. COTUL was established as a response to the evolving nature of functional requirements of Tanzanian academic libraries arising from the rapidly evolving landscape of Education research in the country. Consortiums of libraries would enhance their collective ability to provide electronic information resources essential for today's research (Mhando, 2019).

Cooperation between libraries, also referred to as library consortia, has also seen tremendous growth from undefined beginnings to today. The development of library consortia has "left its origin ambiguous", according to Nfila & Darko (2002). This interlibrary lending practice in Library Collection Based Institutions saw rapid growth from the late 19th century in the era of development of communication networks. Library's shift from print to electronic resources necessitated the formation of consortia because they enabled the sharing of electronic resources available at several libraries. This critical partnership allows libraries to share resources and opportunities for professional development at large scale and build capacity by participating in group organized training sessions (Muneja et al., 2023). The modern

consortium models were developed from Information and Communications Technologies (ICTs) that enable a consortium to be members of both electronic and physical resources.

The International Coalition of Library Consortia (ICOLC) has been an indispensable link between the consortia since 1996 with its primary functions in relation to strategic planning and dissemination needs as well as advocacy on behalf of its member libraries around the world. Currently, there are 170 subscribed members of the coalition. International Coalitions of Library Consortia (ICOLCs) have the potential to provide significant cost savings for libraries through bulk orders and joint and collective fundraiser activities. The coalition's emphasis on professional development not only improves staff professionalism but also the quality of library services to meet user needs (ICOLC, 2023).

One of the most effective methods of the recent times in digital era is the development of a consortium. These consortia are in the process of development, such as Consortium of Uganda University Libraries (CUUL) and Kenya Library and Information Services Consortium (KLISC). The decentralized collection of member libraries in collaboration enables effective electronic resource (E-resource) sharing as opposed to individual libraries since no single library can afford all resources required by its users. The Consortium also provides a forum for the sharing of e-resources and will seek to build the capacity of library staff (COTUL, 2020). Research Data Management (RDM), part of the services offered within universities, supports important aspects of research collaboration, encouraging data sharing services from start to finish of the research project (Wolski & Richardson, 2011; Brochu & Burns, 2019). Improved access to resources and inter-university collaboration brings mutual benefits to universities and their communities.

Capacity building is a well-known strategy that involves building up individuals, organizations, and systems to acquire the knowledge, skills, competencies, and resources needed to act effectively and survive in an ever-changing environment. UNESCO (2010) defines capacity building as a process that goes beyond training, and involves institutional strengthening, knowledge sharing, leadership development, networking and development of sustainable mechanisms to facilitate continuous improvement. In the library and information profession, capacity building is now considered as a key necessity, owing to the fast-changing technology, the user demands, digital scholarship programmes, and the complexity of the information service. Theoretical approaches to capacity building focus on the importance of ongoing learning and support for the organisation to develop professional competence, rather than on single training interventions. Within the context of UNESCO's capacity development framework, I use three interconnected levels of capacity development: the individual level (knowledge and skills acquisition); the organizational level (institutional structures, policies, and resources); and the enabling environment level (broader systems, partnerships and policy frameworks that enable professional growth) (UNESCO, 2010). The concept is relevant to library consortia because training programmes that are delivered at the consortium level are aimed at both the individual librarian and the member institutions as well as the broader academic information landscape.

Continuing Professional Development (CPD) is an important conceptual underpinning for the discussion of capacity building in librarianship. Continuing professional development (CPD) is the systematic maintenance, development and broadening of knowledge, skills and competencies, throughout a person's professional life (Varlejs, 2016). The CPD approach acknowledges that professional competence is evolving and needs to be continually developed to meet the demands of new technologies, changing information behaviours and new demands for services. Professional Development activities can involve formal training, workshops, mentoring, conferences, collaborative projects, on-line learning, and attending professional networks. Library consortia have a vital part to play in enabling CPD by providing opportunities for member institutions to learn together, share resources and exchange knowledge with each other.

The International Federation of Library Associations and Institutions (IFLA) competency framework for library and information professionals offers a worldwide standard for library and information professionals' professional development. The framework lists the following areas of key competency: information resources management, information technology, leadership and management, research support, user services, communication and advocacy, and professional ethics (IFLA, 2016). These skills are representative of the growing responsibilities of 21st century librarians, and illustrate the need for ongoing capacity development to meet the needs of effective service provision.

The framework also highlights lifelong learning as professional responsibility and inculcates in institutions the need to have planned staff development programmes where competencies can be acquired and developed.

Likewise, Special Libraries Association (SLA) Competencies for Information Professionals focuses on a blend of professional competencies and personal competencies needed in today's information environment. Under the umbrella of professional competencies, the information and knowledge management cluster, research and analysis cluster, information services cluster, technology application cluster, and organizational alignment cluster are all considered. Under the umbrella of personal competencies, adaptability, leadership, communication, critical thinking and commitment to lifelong learning are all covered (SLA, 2016). The framework highlights the need for ongoing learning and development to ensure that librarians are relevant and effective in the dynamic knowledge landscape.

Studies of continuing professional development of librarians around the world have shown that the continuous training of librarians has significant impact on the quality of services, technology level, research support skills and effectiveness of institutions. Research undertaken in Africa shows that there are many problems that librarians encounter, such as inadequate training, financing, lack of support for their professional development, and technological changes. Despite these challenges, the implementation of CPD programmes has been proven to enhance librarians' digital skills, teaching of information literacy, research data management skills and confidence in librarianship (Ocholla & Shongwe, 2013; Issak, 2018). As a result, joint approaches like library consortia have become significant tools to meet the professional development needs in resource-poor settings.

In the African environment, library consortia have come to be seen as not only as a means of resource sharing, but also as a means of enhancing library capacity. Consortia also participate in training and professional development programs such as workshops, conferences, mentoring programs, collaborative projects, and specialized training programs to help build the skills necessary for the management of electronic resources, institutional repositories, research data services and digital libraries. These support both UNESCO's capacity development framework and international competency standards by enhancing individual competencies, institutional capacity and collaborative networks.

The literature thus indicates that capacity building is a multi-dimensional process, characterized by a process of continuous professional development, competency enhancement and the support systems of the institution. UNESCO, IFLA, and SLA have developed frameworks that offer important theoretical bases for assessing the capacity-building initiatives in library consortia. The frameworks are especially relevant for the COTUL study because they provide the guidelines on how Consortium related training and professional development activities contribute to enhancement of competencies, effectiveness of the organizations, and quality of academic library services in Tanzania.

Methodology

This study employed a mixed-methods approach, combining both quantitative and qualitative methods to evaluate the role of COTUL in enhancing teaching and research activities in university libraries in Tanzania. The research was carried out in selected (10) university libraries which are most active members of COTUL, including the Open University of Tanzania (OUT), Ardhi University (ARU), Muhimbili University of Health and Allied Sciences (MUHAS), University of Dar es Salaam (UDSM), Dar es Salaam University College of Education (DUCE), Dar es Salaam Tumaini University (DarTU) all from Dar es Salaam. Others included Mzumbe University (MU)- Morogoro, University of Dodoma (UDOM)- Dodoma, Mbeya University of Science and Technology (MUST)- Mbeya, and Nelson Mandela African Institution of Science and Technology (NM-AIST)- Arusha). The study focused on library staff who were actively involved in COTUL activities.

Image 1: Study Area Map



Structured questionnaires were distributed to Library staff, and in-depth interviews for Head of departments of university library and COTUL executive leaders were used in qualitative data collection. Quantitative data were analysed using descriptive statistics. This study sought to investigate how capacity building initiatives implemented through COTUL have impacted the professional competencies, service delivery, and institutional relevance of university library professionals. It also explored the challenges faced, the perceived value of the programs, and the extent to which these initiatives are aligned with the evolving roles of academic librarians in the digital era.

Targeted Population

The target group of this study were the staff of selected University Libraries who are active members of COTUL, the total target population was 250 people.

Sample size

Sample size is the number of participants in the population used to generalize the results of the study. When it is not possible to study the entire population, but the population is known, a small sample is taken using the random sampling method. Therefore, Taro Yamane, T. (1967) Statistic, the study used the Yamane formula to calculate and determine the sample size in research. The formula is:

$$n = \frac{N}{1 + N(e)^2}$$

n= sample size
N=population
e= margin of error (5%) with 95% confidence level
1= is constant
Data given:
n= 250/1+250 (0.05)2
n=250/1.625=154
Therefore, n=154
Thus, samples of 154 respondents was used in this study.

Sampling

It is not possible for the researcher to collect information from all the respondents to answer the research questions. A Respondents were selected using two different sampling methods; simple random sampling and purposive sampling techniques.

Sampling Technique

For this study, a total sample of 154 respondents was selected from a population of 250. A combination of simple random sampling and purposive sampling techniques was employed. Simple random sampling was used to ensure that each member of the population had an equal chance of being selected, thereby reducing selection bias. Additionally, purposive sampling was implemented to include specific individuals who were relevant to the research objectives, ensuring the inclusion of key informants with essential characteristics and rich experiences.

Ethical Considerations

The study complied with the principles of research ethics: respect for persons, autonomy and self-determination, voluntary participation, beneficence, justice, integrity, confidentiality and informed consent. To guarantee that all participants' rights were respected, risks were minimized and handled fairly, and that the research was carried out in a socially beneficial and trustworthy way, all stages of the research were guided by the following principles. Information was given to all participants about the purpose of the study, that it would be voluntary and that they could leave at any time without penalty. All survey and interview respondents gave informed consent, in writing or by recording.

A number of steps were taken to ensure confidentiality, as institutional-level response data might allow identification of those within institutions (such as DUCE, with n = 8 respondents and MUST, with n = 7 respondents). At the level of the individual, the data were anonymized by removing individual identifiers during the processing of the data. The results are only communicated in a summarized manner and no information is provided that could reasonably allow a participant to be identified. In the presentation of quotations from interviews, participants are anonymized with non-identifiable codes or with vague participants' categories and potentially identifying contextual information has been either redacted or generalized. Interview subjects were told that excerpts of their interviews would be used anonymously in publications and presentations, and other research products. Anonymized quotes were only published after explicit consent was given before interviews were conducted.

The use of Artificial Intelligence (AI) tools was limited to language editing, language proofreading and preparation of the manuscript. All study design, data collection, data analysis, interpretation of findings and decisions on the content of the manuscript were completed by the authors. All manuscript content is reviewed and verified by the authors and they accept full responsibility for the accuracy and integrity of the content. Thus, I declare that I have no financial, professional or personal conflicts of interest that could have influenced the conduct, analysis, interpretation or reporting of this research.

Table 1: Population and Sample

S/N	University	Population	Sample
1	Open University of Tanzania (OUT) – Dar es Salaam	32	20
2	Ardhi University (ARU) - Dar es Salaam	24	15
3	Muhimbili University of Health and Allied Sciences (MUHAS) - Dar es Salaam	29	18
4	Mzumbe University (MU) - Morogoro	26	16
5	University of Dodoma (UDOM) - Dodoma	32	20
6	University of Dar es Salaam (UDSM) - Dar es Salaam	40	25
7	Dar es Salaam University College of Education (DUCE) - Dar es Salaam	17	10
8	Mbeya University of Science and Technology (MUST) - Mbeya	16	10
9	Dar es Salaam Tumaini University (DarTU) - Dar es Salaam	16	10
10	Nelson Mandela African Institution of S&T (NM-AIST) - Arusha	18	10
	Total	**250**	**154**

Source: Field Data (2026)

Results of the survey

A total of 154 questionnaires were submitted to university libraries personnel working in selected universities in Tanzania as indicated in Table 2. The research successfully obtained 120 questionnaires while the 34 were incomplete. The collected questionnaires reach a rate of 77.92% from all distributed surveys. Begrh (2021) identifies responses of

50% as satisfactory while he labels responses between 50% and 60% as good returns and anything above 70% as excellent. The research content by Cohen (2014) suggests survey response rates between 50% and higher than 70 demonstrate solid results. An excellent response level of 77.9% was achieved based on the above premise. Table 2 below illustrates the number of respondents from university libraries in Tanzania that answered the questionnaire.

Table 2: Distribution of Questionnaires

S/N	University	Questionnaire Distributed (F)	Questionnaire Returned (F)	Response Rate (%)
1	Open University of Tanzania (OUT) – Dar es Salaam	20	16	80.0
2	Ardhi University (ARU) - Dar es Salaam	15	12	80.0
3	Muhimbili University of Health and Allied Sciences (MUHAS) - Dar es Salaam	18	14	77.8
4	Mzumbe University (MU) - Morogoro	16	12	75.0
5	University of Dodoma (UDOM) - Dodoma	20	16	80.0
6	University of Dar es Salaam (UDSM) - Dar es Salaam	25	19	76.0
7	Dar es Salaam University College of Education (DUCE) - Dar es Salaam	10	8	80.0
8	Mbeya University of Science and Technology (MUST) - Mbeya	10	7	70.0
9	Dar es Salaam Tumaini University (DarTU) - Dar es Salaam	10	8	80.0
10	Nelson Mandela African Institution of S&T (NM-AIST) - Arusha	10	8	80.0
	Total	**154**	**120**	

Source: Field Data (2026); Note: F - Frequencies, % - Percentage; N=154; n=120

Findings

Capacity building initiatives by COTUL in strengthening the universities libraries professionals.

COTUL helps to improve the abilities and services of university libraries in Tanzania. Professional training, ICT skill growth and joint workshops are some of the ways COTUL ensures that its staff have the competencies required for today's academic and research needs of library users. The Consortium supports resource sharing by enhancing availability and access to electronic databases, inter-library loans and repository resources. COTUL assists in improving library technologies and upgrading infrastructure as well as forming national and international partnerships to access useful knowledge and funding. By joining forces, the efforts help university libraries offer excellent services to support teaching, learning and research in the country. Also, the researcher was informed by the COTUL's Officer (He) that:

"The Consortium delivers multiple training programs to users which encompass electronic resource proficiency training plus reference management using Mendeley and web-based platform instruction such as blogs, Drop Box and Google Drive and Wiki applications. Additionally, they provide information literacy education and scientific writing guidance and more. The training session attracted less than 10 users from both groups since academic personnel focused on patient care and teaching activities. Information literacy training and orientation time for new academic and health staff members were insufficient since the training occurred each academic year on voluntary basis." (Host of COTUL Training, 2026).

Table 3: Capacity building initiatives by COTUL in strengthening the universities libraries professionals.

Initiatives	f	%
Training and Professional Development	76	63.33
Resource sharing and Inter Library Cooperation	13	10.83
Collaborative Research and Knowledge Exchange	11	9.17
Advocacy and Policy Development	10	8.33

Technical Support and Infrastructure Development	10	8.33
Total	**120**	**100**

Source: Field Data (2026); Note: F - Frequencies, % - Percentage; n=120

Effectiveness of COTUL's capacity building initiatives in strengthening the skills and competencies of Universities Libraries

The effectiveness of capacity building initiatives on the development of LIS professionals include upgrade of professional skills, effective service delivery, increased knowledge in the use of ICTs in university libraries, better communication/ interpersonal relationship with users, better e-library management, timely service delivery, improvement in the quality of academic research conducted by information professionals, enhanced promotion of library services and resources and improved visibility of the librarianship profession.

Table 4: Effectiveness of COTUL's capacity building initiatives in strengthening the skills and competencies of Universities Libraries

Effectiveness	**OUT**	**ARU**	**MU**	**MUST**	**DUCE**	**UDOM**	**UDMS**	**DarTU**	**MUHAS**	**NM-AIST**	**f**	**%**
Upgrade of professional skills	10	6	6	1	2	10	13	2	8	2	60	50.00
Better communication/ interpersonal relationship with users	1	1	1	1	1	1	1	1	1	1	10	8.33
Better E-Library Management	1	1	1	1	1	1	1	1	1	1	10	8.33
Timely service delivery	1	1	1	1	1	1	1	1	1	1	10	8.33
Better academic research writing by information professionals	1	1	1	1	1	1	1	1	1	1	10	8.33
Enhance promotion of library services and resources	1	1	1	1	1	1	1	1	1	1	10	8.33
Error free cataloguing and classification of library materials	1	1	1	1	1	1	1	1	1	1	10	8.33
Total	**16**	**12**	**12**	**7**	**8**	**16**	**19**	**8**	**14**	**8**	**120**	**100**

Source: Field Data (2026); Note: F - Frequencies, % - Percentage; n=120

Skills acquired by respondents through Consortium Capacity Building Programs

Digital Marketing skills developed among most participants arose from their superior digital abilities. Users develop attitudes about digital skills through their evaluation of technology acceptance and its perceived usefulness according to the validated standards of the Technology. During a visit and discussion, the Head of library mentioned:

"Digital marketing skills have great importance because they help information seekers access timely relevant information while allowing them to obtain distant content while facilitating information evaluation. The contemporary digital age requires this knowledge because it is characterized by vast information quantities and by information transmission through various media platforms." (Head of Library, 2026).

Table 5: Skills acquired by respondents through consortium capacity building programs												
Skills	**OUT**	**ARU**	**MU**	**MUST**	**DUCE**	**UDOM**	**UDMS**	**DarTU**	**MUHAS**	**NM-AIST**	**f**	**%**
Digital Marketing skills	4	2	3	1	2	3	3	2	2	2	25	20.5
Advanced search technologies	3	2	2	2	2	4	4	2	2	1	24	19
Sharing digital content	3	3	2	1	1	3	5	2	3	2	25	20.5
ICT for information processing/retrieval	3	2	2	1	1	3	4	1	4	2	24	19
Digital Preservation Techniques	3	3	3	2	2	3	3	1	3	1	27	22
Total	**16**	**12**	**12**	**7**	**8**	**16**	**19**	**8**	**14**	**8**	**120**	**100**

Source: Field Data (2026); Note: F - Frequencies, % - Percentage; n=120

Challenges faced by librarian in the implementation of capacity building programs

The success of any capacity building program depends on proper financial backing, support from institutions, advanced infrastructure and everyone being open to learning constantly. Each of these core challenges must be dealt with to assure librarians are capable of handling the fast-changing demands in academics and research. During the interview the Head of library voiced their scheduling frustrations because their changing shifts disrupted their regular tasks. He said:

"The first limiting factor on trained knowledge implementation stems from poor infrastructures and the second stems from inconsistent training schedule delivery." (Head of library, 2026)

Table 6: Challenges faced by librarian in the implementation of capacity building programs												
Challenges	**OUT**	**ARU**	**MU**	**MUST**	**DUCE**	**UDOM**	**UDMS**	**DarTU**	**MUHAS**	**NM-AIST**	**f**	**%**
Restricted funds	5	4	5	3	2	5	7	3	5	2	40	33.3
Weak infrastructure	6	5	4	2	4	6	6	3	6	4	50	43.3
Logistical limitations	5	3	3	2	2	5	6	2	3	2	30	23.3
Total	**16**	**12**	**12**	**7**	**8**	**16**	**19**	**8**	**14**	**8**	**120**	**100**

Source: Field Data (2026); Note: F - Frequencies, % - Percentage; n=120

Suggestions for the consortium to enhance cooperation and promote capacity building programs

The main case for these suggestions emphasized that managerial financial backing would grant libraries full participation in knowledge-sharing activities. The following remark came from Heads of Library in this context:

"The development of knowledge sharing and cooperative training requires university administration approval because all advancement needs their explicit permission. The process of such official agreement between the university needs to be accompanied by financing to pay for all program expenditures. Expected outcome of enhanced managerial backing will facilitate greater achievements for our team." (Head of Library, 2026).

Table 7: Suggestions for the consortium to enhance cooperation and promote capacity building programs		
Suggestions	**f**	**%**
University Management Support	30	25
Improve ICT Facilities	30	25
Promote Library Services	20	16.7
Provision of Regular Training	30	25

Improve Infrastructure	10	8.3
Total	**120**	**100**

Sources: Field data (2026); Note: F-Frequencies, %- Percentage; n=120

According to the above statements inadequate funding serves as a primary obstacle which blocks successful knowledge sharing participation in libraries. The study participants declared that ICTs must be established as fundamental elements in knowledge sharing operations which deserve appropriate weight. The survey participants wanted better ICT hardware as well as improved internet access points and expert staff training. All ICT staff across selected libraries unanimously adopted these proposals according to the collection of responses. Head of Library gave an example when he said:
"Some valuable resources fail to reach their maximum potential because ICT facilities remain insufficient. The facilities contain both a computer system together with a reliable internet connection. The current Wi-Fi Internet service of our organization cannot satisfy user needs properly. Needing to increase our service scope would allow us to meet user requirements thus enabling electronic resource access remotely. Such achievement would decrease facility overload and increase resource utilization at once." (Head of Library, 2026)

Other participants echo similar beliefs as demonstrated in the preceding statement. Mwantimwa, Elia, and Ndenje-Sichalwe (2017) stated that upgraded ICT services would address the low usage of e-resources within the Consortium framework. The research showed that library users need to enhance their usage of library materials especially the electronic Consortium-purchased content according to the participants' responses. The suggestion aimed to enhance resource usage because it would help libraries explain their expenses and support their funding needs. Heads of Library explained resource utilization needs improvement according to this statement:
"The difficulty of fund raising for support arises because available materials show low utilization rates. The successful implementation of increasing use and excess demand for these resources will help us gain convictions from funders as well as university management to support our needs. We will obtain backing for our collaborative library work efforts through this approach. According to the reported account "library staff do not have responsibility to promote resource usage." The lecturers must provide their support for this system to operate. Students need their lecturers to motivate them toward additional reading materials beyond class notes." (Head of Library, 2026).

This suggestion reveals a necessity for library organizations to develop income-generating initiatives which will help them withstand dependence on other funding sources. The library should conduct more activities with existing resources such as computers to produce necessary revenues. The Host of COTUL training suggested to the researcher during a conversation that:
"The SIDA supported Library worked to develop a central "federated search system" which enables users to view multiple databases from a single interface due to their lack of understanding about available electronic resources." (Host of COTUL training, 2026).

Discussion

This study examined the contribution of the Consortium of Tanzania University and Research Libraries (COTUL) to capacity building among library professionals in Tanzanian universities. The discussion draws on the findings presented in Tables 2–6 and interprets them in relation to the existing literature and the Technology Acceptance Model (TAM). The findings provide evidence that consortium-based professional development contributes significantly to librarians' acquisition of digital competencies, although important institutional and infrastructural challenges remain:

Adequacy of the Study Sample

The overall return rate of questionnaires was about 77.9% with 120 of the 154 questionnaires returned (as indicated in Table 2). The rate of participation among library professionals (between 70% and 80%) in the 10 participating institutions was high. The return of such numbers of responses are typically regarded as satisfactory in research that involves survey methodology and provide some assurance that the results are representative of the experiences of librarians in the surveyed institutions. Representativeness of institutions from different geographical regions and institutional types also bolsters the credibility of the results. However, since the study was conducted on ten COTUL

member institutions, the results are considered applying to COTUL member institutions as opposed to all University Libraries in Tanzania.

Effectiveness of COTUL Capacity-Building Initiatives

As shown in Table 3, the most important effect of COTUL's capacity building activities was improvements in professional skills with 50% of the responses focusing on this. Other gains reported were better communication and interpersonal interaction with the users, better e-library management, timely services, better academic research writing, promotion of library services, and better cataloguing and classification practices. The results reflect that COTUL has been able to build the capacity of librarians in both technical and service aspects of the profession.

The dominance of professional skills enhancement is consistent with other findings by Mwanjala (2020) and Mhando (2019) who state that library consortia are important in enhancing the professional skills through the processes of sharing learning and resources. However, the ICOLC report (2023) indicates that joint training programmes and professional networks also play an important role in the good working performance and effectiveness of institutions and the quality of services. The present findings indicate that COTUL has played this role in offering librarians an opportunity to keep up-to-date with the information environment, and adjust to the rapidly changing nature of it.

But there is another point of interest seen in the distribution of responses. Skills upgrading in the field of profession was reported widely, whereas upgrading of communication skill, research support skill and service delivery skill were reported less. This could indicate that training efforts have been mainly directed to technical abilities and not to more general user-engagement and leadership abilities. This discovery underscores the importance of more balanced strategies to professional learning in the future.

Skills Acquired Through Consortium Capacity-Building Programmes

As seen in Table 4, the respondents gained a wide range of digital skills in COTUL supported programmes. The skills most often reported were digital preservation techniques (22%), digital marketing skills (20.5%) and digital content sharing (20.5%). Advanced search technologies, and ICT applications for information processing and retrieval skills, both had 19% of responses.

The results are in line with the current literature which focuses on the significance of digital skills in the academic librarian's role. The use of technology is essential for these new research settings, and Wolski and Richardson (2011) assert that modern librarians must possess advanced technological skills to keep up with the increasingly digital research landscape; digital preservation and data management are also key concepts that modern librarians must be able to engage with in order to support the long-term preservation of knowledge resources and scholarly communication, as noted by Brochu and Burns (2019).

These findings may be understood with the aid of the framework of the Technology Acceptance Model (TAM). The study found that greater perceived usefulness and ease of use of technologies increases willingness to adopt. TAM found that perceived usefulness and ease of use of technologies correlates with willingness to adopt. A wide range of skills in digital preservation, advanced searching, information retrieval and digital content management demonstrates that librarians are aware of the positive aspects of these technologies on enhancing their service delivery and professional performance. The training programmes may thus have contributed to increases in both perceived usefulness and perceived ease of use, increasing the use of digital tools in university libraries.

One interesting observation is that the skills acquired were not highly skewed, it was a reasonably even-spread. The respondents did not focus only on a single competency area but indicated improvements in several areas of digital work. Though this reflects the wide scope of COTUL's training activities, it could highlight the lack of specialist advanced training. With growing support and development for research data management, AI applications, and digital scholarship initiatives in academic libraries, specific training and development tracks could be necessary for future capacity building programmes.

Challenges Affecting the Implementation of Capacity-Building Programmes

Although there are positive results, there are significant challenges with programme implementation as shown in Table 5. Inadequate infrastructure was the greatest challenge (43.3%), then limited funding (33.3%) and logistics (23.3%). The results indicated that, in addition to the provision of training, effectiveness of capacity building activities is also dependent on the institutional context in which the new skills are being used.

The key role infrastructure-related issues play is congruent to the findings of Muneja et al. (2023), who noted that technological readiness gaps also still hinder the efficacy of consortium approaches in many developing-country settings. Likewise, a lack of resources has been known for a long time as a challenge for sustainable professional development and technological innovation in academic libraries.

One interesting and somewhat surprising finding is that infrastructure deficits were cited as a problem more often than the lack of funding. This is somewhat at odds with research that has been reported that pinpoints the financial constraints as the main impediment to library development. The findings indicate that, despite available training resources in these activities, improper ICT facilities, poor internet connection, and obsolete technological systems can hinder the librarians' ability to put the newly acquired skills and knowledge into practice. Therefore, investments in infrastructure also seems to be as significant as investments in training itself.

Strategies for Enhancing Capacity Building and Cooperation

Respondents offered some suggestions about the ways to enhance the effectiveness of the consortium and improve professional development. Table 6 indicates that 24% of the respondents identified University management support, 24% identified Improved ICT facilities and 24% identified regular training programmes as supporting factors. Infrastructure improvement and promotion of library services were the next significant areas with 13% and 15% respectively.

These recommendations are in line with the need for collaboration between consortia and institutional leadership for sustainable capacity building. Organisational commitment, support of policy and resource allocation appear to be key factors for successful implementation of training outcomes with the management support focus. This is in line with the recommendations made by ICOLC (2023) and COTUL (2020) that strategic partnerships and institutional investment are key factors for the success of consortium initiatives.

The great focus on ongoing training is another indication of the dynamic information technologies and scholarly communication systems. Librarians are working in a dynamic digital environment that is constantly changing, and their knowledge and skills must be as dynamic. The results, therefore, indicate that capacity building cannot be considered as a single intervention but needs to be seen as a continuous process.

Limitations and Generalisability of the Findings

The results should be interpreted with caution in view of some limitations. First, the study only included ten COTUL member institutions and as such, not necessarily representative of all academic libraries in Tanzania. Non-consortium institutions might have unanticipated problems and opportunities in terms of professional development.

Second, the study was mainly based on the perceptions of the respondents based on self-reporting. Though people may have a perception of improvements or changes in performance or service quality, it does not necessarily reflect actual changes. Objective measurements, like service usage statistics, research outputs or digital resource usage rates, could be added in future studies.

Third, because of the cross-sectional design, the experiences of respondents were only captured at one point in time and the long-term impact of the capacity building interventions were not measured. More detailed knowledge of the impact of training on professional practice could be found by longitudinal studies.

Overall, the findings are credible as multiple institutions participated in the study, although the relatively high response rate (77.9%) was a limitation. The study, therefore, contributes valuable information on the role COTUL plays in the University libraries' professional development in Tanzania. Note that caution should be used when generalizing the

results to other institutions or other national contexts that may have different technological, financial, and policy contexts.

Recommendations

1. Strengthen Digital Infrastructure Across Member Institutions

Recommended solution: Ensure adequate internet connectivity, adequate bandwidth, cover the campus network for better connectivity, and have reliable power supply systems to facilitate uninterrupted access to electronic resources.
Responsible party**:** member institution management – university leadership and library management; government agencies (if infrastructure investment is needed).
Outcome: It will lead to better access to digital scholarly resources, fewer service disruptions, and better teaching, learning, and research activities.

2. Enhance Awareness and Visibility of Electronic Resources

Recommended action: Promote/encourage use of available electronic resources – through university portals, library websites, social media, orientation programs, and specific awareness campaigns.
Responsible party: Management of the member institutions, university libraries.
The expected outcome is a greater awareness, more use of subscribed resources and a higher return on investment of using digital collections.

3. Institutionalize User Training and Information Literacy Programs

Recommended action: Organize frequent workshops, seminars and training sessions for the students, academic staff and researchers on how to search, retrieve, evaluate and utilize the electronic resources effectively.
Responsible party: Management of the member institutions, university libraries.
The expected outcomes are: increase in digital literacy, the efficient use of scholarly resources and research productivity.

4. Expand Consortium-Wide Capacity Building Initiatives

Recommended next steps: Design and implement holistic training programs on new digital skills, research support services, electronic resource management, and other institutional capacities.
Responsible: COTUL leadership.
Outcome Desired: Library and information staff should develop their professional skills, as it will enhance their services and resources management in member institutions.

5. Promote Knowledge Sharing and Inter-Institutional Collaboration

Recommended action: Set up formal working groups, communities of practice, collaborative projects for member institutions to share expertise, experiences and best practices.
Party responsible: COTUL leadership; Member institution management actively involved.
Outcome: Improved inter-institutional cooperation, elimination of unnecessary duplication of efforts and sharing of innovative initiatives in the management of resources and user support.

6. Diversify Funding Sources and Strengthen Financial Sustainability

Recommendation: seek funding sources outside of the library budget, such as grants, partnerships, and opportunities for donations to library services and digital resources; encourage member universities to allocate more resources to library services and digital resources.
Responsible parties: COTUL leadership, member institution management, government and international donors.
Outcome to be achieved: Consortium activities to become more financially sustainable, increased availability of resources, sustainability of services.

7. Increase Government Support for Digital Higher Education Infrastructure

Recommended action: Ensure policy support and investment in broadband connectivity, digital infrastructure and access to research resources in higher education institutions.
Responsible party: Government.

Outcome: More conducive environment for digital scholarship, increased institutional capabilities, and equitable access to research tools in universities.

8. Support Strategic Development Through Donor Partnerships

Recommended action: Support financial, technical, digital literacy and innovation projects in member institutions and the consortium through financial and technical assistance.
Leadership and member institutions of COTUL and International donors.
Desired outcome: Smooth and faster execution of capacity development activities, and improve institutional capacity to provide quality research and learning support services.

9. Establish a Monitoring and Evaluation Framework for Consortium Programs

Recommended action: Formulate and establish a structured monitoring and evaluation system to evaluate performance and measure outcomes and to identify challenges and implement continuous improvement.
Responsibility: COTUL leadership.
Outcomes: Evidence-based decision making, increased program effectiveness, increased accountability, and increased impact of consortium efforts.

Conclusion

The Consortium of Tanzania University and Research Libraries (COTUL) help universities access electronic scholarly content yet faces problems with implementing this access. Library staff and user training along with sustainable funding acquisition will be essential to minimize diverse obstacles and obtain membership benefits of the consortium. The research outcomes offer strong value for improving academic Institution collaboration across Tanzania to achieve their shared intellectual activity goals.

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