

Strategies for sustainable access to electronic resources during COVID-19 Pandemic Era : Experience from the Consortium of Uganda University Libraries

DOI: 10.61735/j0pfa041

¹Jackline Estomihi Kiwelu, ²Andrew Mwesigwa, ³Jesca Karungi

¹<https://orcid.org/0000-0003-1365-1841>, ²<https://orcid.org/0000-0002-9331-2526>

¹Kampala International University, ²Makerere University, ³Aga-Khan University Uganda

ABSTRACT

The paper shares the strategies the Consortium of Uganda University Libraries (CUUL) adopted to provide access to electronic resources to its member libraries in COVID-19 pandemic era. It examines the challenges, opportunities COVID-19 brought and how CUUL managed to deliver its mandate during the pandemic. The study used a qualitative research approach and a survey research design. A structured online interview data collection tool was employed to collect the required information from the CUUL executive committee members and the electronic resources functional committee. Content analysis method, with coding and categorization, was used for data analysis and presentation of findings. This paper creates awareness of the challenges, opportunities COVID-19 brought and strategies the CUUL used to sustain e-resources subscription since the outbreak of COVID-19. Funding and licensing costs are among the challenges mentioned while the opportunities were that the funders' awareness of the need for e-resources and the online learning needs justified the need for e-resources sustainability by the consortium. Embracing open access initiatives, remote access and longer licensing period were among the strategies for e-resources sustainability. This paper provides effects and strategies for responding to global hazards that have the potential to affect consortium's income for sustainable subscription to e-resources. It also adds literature on the impact of COVID-19 on university libraries in developing countries which is minimal.

(Key words: Consortium of Uganda University Libraries, Consortia sustainability, Electronic resources and services; COVID-19; Academic libraries; Uganda, Pandemics.)

I. INTRODUCTION

Coronavirus (COVID-19) is a viral disease, which was first reported in Wuhan, China in December 2019. The virus persistence against vaccination has raised global concern (Andrews et al., 2022). The pandemic effects have changed the way people socialize, interact and access services in almost all sectors of human life (Machovec, 2020; Haque, 2022). Since the introduction of lock-down measures during the COVID-19 pandemic, work-from-home and e-learning have remained the 'new normal', which have introduced certain implications for using Information, Communication Technologies (ICTS) (Hara & Kawaguchi, 2022).

The effects of COVID-19 were experienced worldwide and libraries were not spared (Machovec, 2020). In North America it was reported that at the peak of the pandemic most of the physical libraries were closed and virtual services took precedence, budget cuts on both the state funded and nongovernmental consortia and limited

services was experienced (Machovec, 2020). The International Coalition of Library Consortia (ICOLC) declared a financial drop and suggested remove of some paywalls to encourage resource sharing and support to international research, encouraged flexibility in timing of membership payment and e-resources subscriptions to support sustainability. Though libraries in North America had a possibility of financial support from the emergence Federal funds, it was not clear how the consortia would benefit. However, at the peak of the pandemic, American Library Association (ALA) provided grants and relief funds to libraries which were experiencing economic hardship (ALA, 2022).

In the United Kingdom, the Chartered Institute of Library and Information Professionals (CILIP) stated that the sustainability of library service provision during COVID-19, requires seeking for financial support from government and other organs like COVID-19 emergency funds (Poole, 2020). This implies that governments in developed countries had emergency funds that were able

to support libraries and their consortia to sustain virtual library services.

The impact of COVID-19 on socio-economic situation in developing countries especially Africa was worse, before the pandemic most of the African countries were already struggling to sustain services to their masses because of rampant poverty and inadequate ICTs infrastructure (Magut, Kiplagat 2022 & Shonhe 2022). Ethiopia, Malawi, Nigeria, and Uganda estimated that 80% of the population could not sustain their income sources during COVID-19 lockdowns, since basic human services like education and food were not easily accessible. Meanwhile countries like South Africa, Morocco, and Kenya complained of the decline in the financial markets shares. These negative socio-economic impacts did not leave libraries and their consortia the same. Serious financial challenges were also registered since libraries are not source of finances but depend on their parent bodies whose finances were struggling (Ekwebelem et al., 2021). Governments and development partners came up with emergency or relief funds for sustaining those individuals and enterprises that deemed badly in need while libraries and their parent bodies were not among them (UN, 2023). In developing countries Libraries experienced budget cuts, they could not qualify for the emergency funds which made them struggle to sustain virtual services that were highly sought for (Mehrem, 2022). This is clear that emergency funds or relief funds did not help libraries in developing countries as it was the case in North America and United Kingdom.

In Uganda, the pandemic hampered the sustainability of electronic library services for effective and efficient information to support teaching, learning and research. Arapasopo & Adekoya, (2021) pointed out that without relief funds for libraries in developing countries, where ICT infrastructure to support online learning is insufficient and unevenly distributed, the impact of COVID-19 will live on for many years to come. Furthermore, the ICTs facilities and licenses to support provision and access to electronic resources for academic and research institutions in Uganda has proved expensive and impossible which necessitated the collaboration among libraries in form of a consortium. The consortiums should plan more effectively to be able to sustain improved library services among member institutions.

The Consortium of Uganda University Libraries (CUUL) is a body established in 2001 to network, mobilize universities and other research libraries to put together resources for sustainable access to wider collection of electronic resources (Mayende, 2017). The consortium shares library expertise and negotiates for favorable licenses to e-content such as e-journals and e-books. With

its values of professionalism, collaboration and integrity, CUUL advocates for improved academic and research libraries in Uganda (Kuteesa, 2016). CUUL is governed by an Executive Committee, General Assembly and Functional Committees, it is sustained financially by membership and e-resources annual subscriptions from its 58 members. Out of 58 members, 50 members are privately funded basically from students' fees while eight (8) are public member libraries government funded. This means much of CUUL income is from the private institutions, which rely on students' fees. COVID-19 brought about lockdowns and closure of member institutions and fees collection was almost impossible especially for private institutions whereas government funded members were fair. As a result, the CUUL income for sustainable access to e-resources was hampered. If that was not enough, physical studies were replaced by e-learning which necessitates electronic resources the most.

Consequently, the demand for electronic resources in COVID-19 era in Uganda is growing and the awareness levels among students, researchers and lecturers is also increasing (Zareef & Ahmad, 2021). This serves as an opportunity for CUUL to advocate for more members to come on board to support the provision of e-resources in member institutions.

Therefore, this study was conducted to establish the effects of COVID-19 to the Consortium of Uganda University Libraries in relation to their mandate of providing access to e-resources services to members. The study also aims at documenting strategies, challenges and recommendations that will help improve practice, decision and policy making for sustaining access to e-resources in times of pandemics or unforeseen disasters.

Objectives

The main objective of this study was to evaluate the provision and accessibility to e-resources by CUUL in COVID-19 era from 2020- 2022 and recommend strategies for sustainability. Specifically, the study sought to:

- i) To find out how CUUL subscribed to e-resources for members from 2020 to 2022
- ii) To study the challenges faced in COVID-19 era when providing sustainable e-resources to member institutions.
- iii) Examine the opportunities that CUUL exploited during COVID-19 era
- iv) Assess the strategies for sustainable consortia e-resources provision adopted by CUUL

II. EFFECTS OF COVID-19 ON CONSORTIUM LIBRARY SERVICE PROVISION

Studies on the effects of COVID-19 on consortium library service provision were reviewed. A general observation is that these studies especially for developing countries are few as noted by Zareef & Ahmad, (2021).

University libraries and other libraries all over the world registered immediate and ongoing impact of COVID-19 (Alvim et al., 2020 & Cox, 2023). The physical library services and finances were hampered whether in developed countries or developing countries. The American Library Association (ALA) provided COVID-19 relief or emergency funds to North American libraries to sustain their services to a tune of \$1.25 million. The beneficiaries included academic and research libraries (ALA, 2022). In the United Kingdom the story was not different, COVID-19 brought in a “new normal” condition where physical libraries were closed and virtual services were embraced. Library budgets were constrained, relief funds came in to support CILIP and other library service providers to be able to sustain the library services (Poole, 2020).

In Uganda all universities were closed for over a year and directed by the Ugandan government to go fully online or in a blended mode as a way to survive in COVID-19 era (Nalumaga & Byamugisha, 2021). Technology enabled library resources and services were expected to be at play in the quickest time possible, the librarians to adjust from physical space mindset service to ICTs enabled support the users (Shastri & Chudasma, 2022).

Though before COVID-19 there has been a transition from physical library spaces to virtual due to the growth of science and technology, the demand for e-resources and ICT skills increased in the pandemic (Cox, 2022). Electronic resources or e-resources are library services such as databases, e-books and journals that are accessed and utilized through the use of an electronic device like a computer, smartphone and the like. Importantly, the electronic resources have improved university library services significantly over the years (Ojukwu, 2017) because of the ICTs capabilities. Electronic resources are easily accessible to users from anywhere through the Internet and updated therefore users can use newly researched information. Therefore, ensuring sustainability of the online resources for universities and other research bodies to spur e-learning cannot be overemphasized (Ngozi et al., 2020). Universities and research libraries adopted a consortium mode of operation to ensure sustainability of these services in

Uganda and most of the African South of Saharan (Kuteesa, 2016).

Sustainability of access to e-resources during COVID-19 era and beyond

Kamińska et al., (2022) explain that a sustainable service or resource is consistently available and accessible today and in the future no matter the changing circumstances. The university libraries in Africa over the years have worked together to ensure the information users access the e-resources in a consistent manner, however it has not been a smooth task because of high licensing costs, inadequate ICTs infrastructure, small library budgets and unreliable source of funding (Ojukwu, 2017). Consequently, the difficulties escalated further with the arrival of COVID-19 (Nalumaga & Byamugisha, 2021) where libraries did not receive relief funds like other socio-economic sectors UN, 2023).

Despite the efforts so far done to combat COVID-19, the effects in the world are still recorded (Laborde et al., 2021). Unforeseen COVID-19 has resulted in an abrupt shift from mode of education delivery from conventional education to electronic (virtual) learning and in some cases blended learning because of lockdowns. The shift impacted on the sustainability of e-resources in universities and other research bodies not only in Uganda but the entire world. The pandemic has created uncertainty in almost all sectors including libraries in developing countries where poverty levels are increasing (Laborde et al., 2021) which necessitated government and development partners to provide some sort of relief or emergency funds to individuals, small, medium and large enterprises for their sustainability (UMFPED, 2021 & UN, 2023). For the safety of library employees from the COVID-19, the libraries in the world shifted to ICTs enabled services such as zoom meetings and social media discussions. The need for e-resources and other virtual library services increased (Holland, 2021; Nalumaga & Byamugisha, 2021). Therefore, the consortiums are more pressured to ensure the sustainability of these services. Only to ensure the resources are available but provide remote access tools which have increased the funds required as reported in a study by (Shastri & Chudasma, 2022). Information communication enabled library services offer a flexible environment for librarians and help them to cut off transport costs and other physical office environment requirements. However, it required a resilient ICTs infrastructure and knowledge which is scarce in developing countries like Uganda where Internet costs are still high. The quick adjustments and plans were required for sustainability of the provision of electronic resources on the part of the librarians.

In this era, consortiums have the opportunity to clearly explain and advocate for the need of e-resources funding and support. It is clear that those who did not value these services before COVID-19 have now appreciated them. It is now clear that the decision makers in African educational institutions have to invest in ICTs and e-resources to be able to cope with the demand for e-learning. On the other hand the consortiums have the opportunity to train their members on various online capabilities so that they position themselves right in the provision of reliable electronic information resources (Asif & Singh, 2020).

Researchers like Owusu-Ansah & van der Wal (2021); Nalumaga & Byamugisha (2021) and Cox (2023) advice university and other research libraries to cope in COVID-19 era and beyond to strategize by investing in virtual services, collaboration, innovation and advocacy at national and international levels. They should adjust, innovate and work quickly to ensure sustainability of the e-resources provision to support online and blended learning universities in COVID-19 era and beyond. Collectively, librarians share common difficulties and should forge solutions together. Consortiums should keep on gathering resources, share expertise and seek funding from government and other funders to support the e-resources provision. Consortiums should explore open access and open science capabilities which have the ability to provide sustainable availability and access to e-resources (Grahe et al., 2020; UNESCO, 2021). Furthermore Consortiums should lobby governments in Africa to provide suitable ICT policies and prioritize digitization. The e-resources should be synchronized with the e-learning platforms to improve on accessibility and usability (Ngozi et al., 2020). However, consortiums in their bid to provide the resources are cautioned to be concerned with copyright and fair use of the e-resources in cases of downloads and digitization in case of print collections. This caution can be observed through training e-resources users both students and lecturers (Kato et al., 2021)..

III. METHODOLOGY

The study was qualitative in nature. It employed document analysis, observations and a structured online interview to collect required information among the CUUL Executive Committee Members, electronic resources Functional Committee (FC) and documents available online. Key informants were purposely selected from the Executive Committee of CUUL (Excom) and CUUL's E-resources functional committee (FC) due to their critical and complementary but unique responsibilities with the promotion of awareness, usage,

financial resource mobilization, management and accountability of the e-resources. They included: - Chairperson, Vice chairperson, Publicity Secretary, Treasurer, Representative Eastern Region, Representative Western Region, Administrator, Representative Northern Region, Chairperson of E-resources Functional Committee and Member of E-resources Functional Committee.

The findings are presented according to the questions asked, coded and categorized according to themes for easy understanding. Using open coding method, segments from responses of key informants were selected and codes of relevant text were formed from the segments. The resulting patterns of similar codes were categorized

IV. RESULTS AND DISCUSSION

The study findings are presented and discussed in a prose as well as tabulated indicating the research question, the selected segments from responses of key-informants, the codes that accrued from the responses and the theme categories.

Means of communication for e-resources subscription in 2020-2022

The respondents were asked to explain how e-resources subscription decisions were made before the Covid-19 and how the subscription decision changed during the pandemic

The results for this objective show that coordination and meetings concerning e-resources subscription processing shifted from physical meetings to virtual online meeting settings among CUUL institutions because of the lockdown measures that resulted from the COVID-19 pandemic. The decision-making process in CUUL did not change due to the COVID-19 pandemic. As was the case prior to the COVID-19 pandemic, the process remained consultative in nature among all stakeholders and was guided by user needs as indicated and assessed with the help of usage statistics. However, the only thing that fundamentally changed was the mode of communication among stakeholder, which then became virtual as physical movement was not possible due to the lockdown measures. These findings agree with those of Cox, (2023) and Ngozi et al. (2020) that online environments were most preferred and viable than physical for library services and meetings during the pandemic. The findings indicate that the principles which guided e-resources' subscription decisions of CUUL, before and after the onset of the COVID-19 pandemic, remained as needs-based, user informed and affordability. The E-resources

FC remained in charge of gathering user inputs. However, the COVID-19 pandemic was the catalyst for the noticeable change from physical to virtual mode of meetings and deliberations by members of the e-resources FC, CUUL executive and member institutions.

Furthermore, the study sought to establish how CUUL members were paying for the e-resources whether paid fully or partly. The findings are presented in Table 1 below

Table 1: Members Payment Statistics

Members	2019		2020		2021		2022	
	Fully	Partly	Fully	Partly	Fully	Partly	Fully	Partly
<i>Public Institutions</i>	5	2	7		8		4	1
<i>Private Institutions</i>	12	2	9	1	10	2	2	
<i>Affiliates</i>	9	1	12	1	7	2	5	1
Total	26	5	28	2	25	4	11	1

Table 1 shows that by March 2022, fewer than usual member institutions had paid subscription fees for 2022 that should have been paid to publishers by the end of 2021. This delay further explains the effect of the COVID-19 pandemic on e-resources budgets of CUUL institutions. One respondent said “government institutions have been able to make their payment which is a different case for private and affiliate who are still struggling.” This further highlighted the fact that different CUUL institutions were affected financially by the COVID-19 pandemic in different ways.

Furthermore, publishers increased license fees for e-resource databases in COVID-19 era. This tremendously added pressure on an already precarious situation at CUUL institutions. Given that there were national and

institutional budget cuts in order to stem the effects of COVID-19, it was difficult for institutions to honor their commitments of contributions in the form of their membership subscriptions. Despite continuous reminders, institutional payments were delayed. Therefore, CUUL delayed making payments for e-resources databases. Whereas, CUUL’s e-resources marketing resulted in new institutional membership registrations due to the fresh appreciation for e-resources, the e-resources bill grew even higher than previously. The funding for e-resources was worsened by the COVID-19 pandemic. The availability of emergency funds would have bailed our CUUL as it was the case for United Kingdom and North America where libraries and the consortia, were supported to sustain e-resources and other library services (ALA, 2022; Poole, 2020; UMFPEP, 2021 & UN, 2022).

Challenges of coordinating and managing e-resources decision-making processes in the Covid-19 pandemic Era

The respondents were asked to explain challenges they encountered during annual e-resources subscription decision making process and how COVID-19 affect the provision of e-resources to CUUL members. The results were analyzed and coded into themes as shown in the

table below. From the codes generated from the data, challenges encountered during annual subscription decision making process ranged from high subscription prices, inadequate funding, unmet user needs, inadequate participation by members, network problems and insufficient e-library services.

Table 2: Challenges of managing e-resources decision-making in Covid-19 pandemic Era

S/N	CODE	CHALLENGES	STRATEGIES ADOPTED TO ADDRESS THE CHALLENGES
1.	Prices and Funding	<ul style="list-style-type: none"> • Expensive databases • Decrease in subscriptions • Budgets cut which led to difficulties in realizing payments • Fewer members fully paid their subscription leading to payment delays • Limited funds due to lockdowns • Shortage of funds to pay for the databases being decided from online meetings 	<ul style="list-style-type: none"> • Held bargaining meetings with publishers • Some databases were dropped • Regular reminders to members • Encouraged members to pay • Negotiation with publishers • Advocate for more funding • Extension of payment deadlines
2.	User needs	<ul style="list-style-type: none"> • Subscribing to resources that meets the needs of all member institutions. 	<ul style="list-style-type: none"> • Subscribing to multidisciplinary collections like ProQuest E-book Central and EBSCO Host • Renegotiate discounts
3.	User participation	<ul style="list-style-type: none"> • Failure of members to participation in decision-making due to reducing interactions and face to face meetings 	<ul style="list-style-type: none"> • The decisions to re-new/drop databases were taken on national usage statistical
4.	Network problems	<ul style="list-style-type: none"> • Network problems that affect meeting attendance 	<ul style="list-style-type: none"> • Moving from place to place searching for internet network
5.	E-library services	<ul style="list-style-type: none"> • Members who had not embraced remote access services faced serious challenges 	<ul style="list-style-type: none"> • Members were trained and they quickly learn the new trends • CUUL procured zoom account to facilitate training

Results on challenges faced in the coordination of e-resources decision-making process and subscription during the Covid-19 Era shows that the sudden change of communication channels that became virtual rather than physical interactions complicated CUUL-stakeholder communication because it was hard to move away from a majorly oral tradition. This impeded timely user needs assessment. As a result, there were delays in arriving at e-resources subscription decisions. Furthermore, the lockdown measures against COVID-19 spread resulted in a steep learning curve for information and digital literacy among users whereby any support given to users had to

be done via online webinars for remote access to e-resources. Prior to this library patrons could simply walk to the libraries of their respective CUUL member institutions for physical support and training.

However, the rest of the challenges were related to dwindling funding for e-resource subscriptions among CUUL member institutions, which was a manifestation of the worsening of an already existing, known and long-standing challenge prior to COVID-19 pandemic. These findings are not far from what was reported in other parts of the world where libraries experienced budget cuts and

financial challenges, the only difference was that some libraries especially in developed countries had access to relief funds (ALA, 2022; Poole, 2020 & UN, 2023).

Opportunities resulting from the COVID-19 pandemic

The respondents were asked to explain opportunities that COVID-19 brought to CUUL in as far as e-resources are concerned. Findings for this objective are presented in Table 3

Table 3: E-resources opportunities resulting from the COVID-19 pandemic

S/N	OPPORTUNITY	CODE	CATEGORY
1	<ul style="list-style-type: none"> The pandemic promoted the use of e-resources since the only available mode of learning was electronic trainings through webinars in a bid to promote e-resources access remotely. 	Promoted use	Usage
2	<ul style="list-style-type: none"> The pandemic positioned CUUL as a strategic partner in promoting e-learning through provision of vital information resources. Covid-19 pandemic justified why institutions should continue to subscribe for e-resources. 	Promotion of e-learning Justified e-resources	E-library services
3	<ul style="list-style-type: none"> The association saved money, for example there were no physical meetings and transport refunds 	No physical meetings	Organizational change
4	<ul style="list-style-type: none"> New institutions joined CUUL as the only avenue upon which online studies could be effectively implemented 	New institutions	Expansion
5	<ul style="list-style-type: none"> CUUL E-resources became vital as most institutions could not provide physical library services to support teaching and learning processes. 	E-resources became vital	E-library services
6	<ul style="list-style-type: none"> CUUL members communicated the value of e-resources to stakeholders 	Value of e-resources	E-library services
7	<ul style="list-style-type: none"> The pandemic provided the opportunity for CUUL members to appreciate the use of remote platforms such as RemoteXs and MyLOFT because it was the way to go. 	Appreciate use of remote systems	E-library services
8	<ul style="list-style-type: none"> The pandemic drastically changed the overall rules of play, everyone had to adapt to an online way of doing things and it was a plus since we reached more members as opposed to when physical meetings and trainings were the normal. 	Adapt to an online way	E-library services
9	<ul style="list-style-type: none"> Users are now appreciating e-resources more than before 	Appreciating e-resources	E-library services

The COVID-19 pandemic brought about some opportunities for CUUL as indicated in Table 3. It positioned CUUL and academic libraries as an indispensable partner in e-learning that became the “new normal” as users became more aware and appreciative of the place of online education and therefore the usage of e-resources platforms. It also resulted in new memberships, which highlighted an opportunity for consolidation of the CUUL partnership. The findings

showed that given the lockdowns, physical access to libraries in CUUL member institutions was reduced as users had to be served remotely. Therefore, remote access to subscription-based e-resources was highlighted as very important. It also highlighted the value of open access e-resources, which were relatively easier to access by researchers at CUUL institutions.

Usage of e-resources notably increased due to the renewed appreciation for e-resources. As a result of the

realization that physical access to libraries was uncertain during the different lockdown phases, there was an agent need for institutions to improve their Information and Communication Technology (ICT) capabilities in order to address access issues, despite the challenges that came with this process. Provision of e-resources increasingly showed the value and contribution of e-library services to alleviate the effects of COVID-19 pandemic on teaching and learning. The library service, which was once seen as optional by some in society, was now more visible than before. Therefore, there was a paradigm shift to e-resources as users appreciated them more than ever before. This necessitated expansion, change and growth in keeping with the fifth law of library science (Majumdar, 2018). Furthermore, due to the central role of e-resources, library services were highlighted as key

indispensable in the teaching, learning and research processes.

Users remained at the center of CUUL's focus in the provision of e-resources during the uncertain times of the COVID-19 pandemic. Amidst ICT challenges, arrangements were made to virtually maintain the collaboration and communications with member institutions with the aim of assessing user needs and feedback in the selection and subscription processes.

Strategies for sustaining e-resources provision

The respondents were asked to recommend strategies for sustaining e-resources provision during the COVID-19 pandemic era and beyond. Findings for this objective are presented in Table 4

Table 4: Strategies for sustaining e-resources provision

S/N	STRATEGIES FOR SUSTAINING	CODE	CATEGORY
1	<ul style="list-style-type: none"> Signing three to five years' service contracts with the publishers in order to avoid yearly increase Make member institutions sign MOUs. A binding document will stop institutions from defaulting 	Avoid yearly increase Institutions defaulting	Funding
2	<ul style="list-style-type: none"> Seek funding from government 	Seek funding	Funding
3	<ul style="list-style-type: none"> Use more open access journals than subscribe to highly priced journals and databases 	Open access	Access
4	<ul style="list-style-type: none"> Need to have the government to settle the E-resources bill and more marketing to have more members on board. 	E-resources bill More members	Funding
5	<ul style="list-style-type: none"> More marketing of e-resources to new member institutions, inclusion of packages for lower levels like secondary schools which were offering online teaching 	Marketing to new member institutions	Funding
6	<ul style="list-style-type: none"> Strengthen the financial base and increase the number of relevant databases subscribed for. 	Financial base	Funding
7	<ul style="list-style-type: none"> Remote Access service through CUUL needs to be maintained as part of the overall e-resource service by CUUL. Do more virtual training to reach out to those yet onboard. Create a MOOC platform and conduct training via a Moodle like platform regularly. 	Remote access	Access
8	<ul style="list-style-type: none"> To lobby from the government to support the consortium as far as provision of electronic resources are concerned 	Lobby support	Funding

S/N	STRATEGIES FOR SUSTAINING	CODE	CATEGORY
9	<ul style="list-style-type: none"> CUUL to revise the sharing formula such that Public Universities pay 80% of the bill while 20% is paid by private and affiliates. This is because government institutions have been able to make their payment which is a different case for private and affiliate who are still struggling. 	Able to make payment	Funding

In Table 4, recommendations for improvement of e-resources provision among CUUL member institutions were highlighted. These included strategies to better manage publisher agreements that could possibly outlast emergency periods such as the nearly two-year lockdown. This recommendation implies that consortia should negotiate and sign longer period e-resources licenses with publishers which can maintain the same prices for not less than five years to cater for inconveniences that comes with annual increases.

Further, it was recommended that there is need to maintain the e-resources remote access platforms, which proved indispensable. This means the consortia should agree with members to have remote access platforms as part of the e-resources subscription because they are no longer an option but a necessity to facilitate flexible access to the e-resources when off campus.

The participants highlighted the need to strengthen the financial base in order to ascertain alternatives and sustainable funding for e-resources subscriptions fees to be able to respond to global hazards like COVID-19. The consortia should keep on advocating and lobbying Uganda government and development partners to pay for e-resources for enhancing research and learning in institutions of higher learning. Furthermore, as a matter of policy libraries should be included as important service providers among the list of those institutions to benefit from national emergence funds. This also means that, libraries should budget for emergency funds that can be used to cater for e-resources sustainability.

Consortia provide useful services to support research and learning, therefore they should diversify membership to include other academic institutions like colleges, advanced secondary schools and research bodies with online teaching modalities. This strategy will increase membership hence increased income for sustaining access to e-resources.

To improve usage of e-resources to justify their necessity and defend budgets, the consortia should synchronize e-resources with e-learning platforms. Since online learning is a norm, this strategy will prompt users to use

the resources that can easily be viewed in their learning platforms.

The consortia should be at the forefront to advocate for open access e-content ventures and self-archiving so that these contents can be easily accessed by members. In addition, the research and institutions of higher learning should include in their policies that their researchers must publish in open access journals.

University and other research libraries should strategize by investing in virtual services, collaboration, innovation and advocacy at national and international levels including enhancing ICTs skills for librarians. It is now clear that the decision makers in African educational institutions should invest in ICTs and e-resources to be able to cope with the demand for e-learning.

V. CONCLUSION

It is clear that COVID-19 pandemic affected the socio-economic aspects of the world which include education services like libraries. ICTs enabled services were preferred compared to physical services so as to avoid human contact and the spread of the disease. Libraries in developed countries were able to access relief funds. Health, and other socio-economic sectors in Uganda and other developing countries through their governments and development partners also received some sort of emergency funds and other support for sustainability, while libraries did not.

Consortium of Uganda University libraries, experienced budget cuts, annual publishers' increases, and delayed of membership contributions, however the consortium managed to sustain the access and use of e-resources. This was possible through dropping out some databases, negotiating with publishers to delay to pay for the resources and exploiting of open access resources. Online meetings, and sending electronic invoices for subscriptions among members was effective. COVID-19 lockdowns made online learning and e-resources access became a necessity for universities and research bodies in Uganda, which was an opportunity for CUUL to justify the need for sustainable e-resources and off-campus

library services. Further research is required to ascertain how CUUL members handled their information needs and how they accessed e-resources during COVID-19.

REFERENCES

- Adebayo, O. A., Ahmed, Y. O., & Adeniran, R. T. (2018). The Role of ICT in Provision of Library Services: A Panacea for Sustainable Development in Nigeria. *Library Philosophy & Practice*. Retrieved from <http://digitalcommons.unl.edu/libphilprac/1951>
- Adela, F. (2020). Reopening Ethiopian Higher Education Institutions Library in the Context of COVID-19. *International Journal of Information Library and Society*, 9(2), 38–43.
- Adomi, E. E., & Oyovwe-Tinuoye, G. O. (2022). COVID-19 information seeking and utilization among library and information science professionals in Nigeria. *IFLA Journal*, 48(1), 216–227.
- Aladeniyi, F. R., & Owokole, T. S. (2018). Utilization of Library Information Resources by Undergraduate Students of University Of Medical Science Ondo, Ondo State, Nigeria. *American International Journal of Contemporary Research*, 8(4), 92–99. <https://doi.org/10.30845/aijcr.v8n4p9>
- Ali, M. Y., & Gatiti, P. (2020). The COVID-19 (Coronavirus) pandemic: Reflections on the roles of librarians and information professionals. *Health Information & Libraries Journal*, 37(2), 158–162. <https://doi.org/10.1111/hir.12307>
- Amao, M. A. (2020). Use of Information and Communication Technology in Library Services, Impact and Challenges. *African Scholars Journal of Contemporary Education Research (JCER-8)*, 19(8), 283–292.
- Ashikuzzaman, M. (2021, January 3). Impact of ICT in Library and Society. *Library & Information Science Education Network*. Retrieved from <https://www.lisedunetwork.com/impact-of-ict-in-library-and-society/>
- Banks, K. (2021). 8 ways COVID-19 has changed library programming forever | AISA | Association of International Schools in Africa. *Association of International Schools in Africa (AISA)*. Retrieved from <https://aisa.or.ke/8-ways-covid-19-has-changed-library-programming-forever/>
- Chakraborty, S., & Jana, S. (2021). Challenges and opportunities of academic libraries in India because of COVID-19. *Annals of Library and Information Studies (ALIS)*, 68(2), Article 2. <https://doi.org/10.56042/alis.v68i2.39571>
- Cherinet, Y. M. (2018). Blended skills and future roles of librarians. *Library Management*, 39(1/2), 93–105.
- Chisita, C. T., & Chizoma, U. S. (2021). Rethinking academic library space amidst the COVID-19 pandemic in South Africa: Preparing for the future. *Information Discovery and Delivery*, 49(2), 105–113.
- Decker, E. N. (2021). Reaching academic library users during the COVID-19 pandemic: New and adapted approaches in access services. *Journal of Access Services*, 18(2), 77–90.
- Fasae, J. K., Adekoya, C. O., & Adegbilero-Iwari, I. (2021). Academic libraries' response to the COVID-19 pandemic in Nigeria. *Library Hi Tech*, 39(3), 696–710.
- Gavit, B. K. (2019). Web Based Library Services. *Library Philosophy and Practice (e-Journal)*. Retrieved from <https://digitalcommons.unl.edu/libphilprac/2931>
- Islam, S., & Islam, N. (2006). Information and communication technology (ICT) in libraries: A new dimension in librarianship. *Asian Journal of Information Technology*, 5(8), 809–817.
- Joel, A. P., & Camble, E. (2023). Information dissemination during the COVID-19 pandemic: The role of librarians in Borno State Public Library. *Information Development*, 39(2), 287–293. <https://doi.org/10.1177/02666669211049122>
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational*

- and *Psychological Measurement*, 30(3), 607–610.
- Lobo, J., & Dhuri, K. R. (2021). Positive impact of COVID-19 pandemic in enhancing digital literacy skills among library professionals: A study. *Library Philosophy and Practice*, 1–18.
- LoC. (2021). *Visiting the Library | Library of Congress* [Web page]. Library of Congress, Washington, D.C. 20540 USA. Retrieved from <https://www.loc.gov/visit/>
- Mahanta, P. K. (2020). Application and Utilization of ICT in the Degree College Libraries of Assam. *Library Philosophy and Practice*, 1–14.
- Mehta, D., & Wang, X. (2020). COVID-19 and digital library services—a case study of a university library. *Digital Library Perspectives*, 36(4), 351–363.
- Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative & qualitative approaches* (Vol. 2). Acts press Nairobi.
- Onye, U. U. (2016). Availability, Accessibility and Utilization of Library Information Resources by Students of the Federal University of Technology, Owerri (FUTO). *Information and Knowledge Management*, 6(10), 20–24.
- Petrowicz, D. (2020). The effects of COVID-19 on Libraries | For Librarians | Springer Nature. *Springer Nature*. Retrieved from <https://www.springernature.com/gp/librarians/the-link/blog/blogposts-news-initiatives/the-effects-of-covid-19-on-libraries/18507278>
- Rafiq, M., Batool, S. H., Ali, A. F., & Ullah, M. (2021). University libraries response to COVID-19 pandemic: A developing country perspective. *The Journal of Academic Librarianship*, 47(1), 102280. <https://doi.org/10.1016/j.acalib.2020.102280>
- RSA. (2020). *KwaZulu-Natal Arts and Culture on reopening of public libraries and museums*. Republic of South Africa. Retrieved from <https://www.gov.za/speeches/kwazulu-natal-arts-and-culture-reopening-public-libraries-and-museums%C2%A014-sep-2020-0000>
- Shaikh, T. A. A. M. (2019). *Application of information and communication technology in libraries: Prospects and challenges*. National Level Conference on Web Based Library and Information Services in Academic Libraries., Shindkheda, Dist. Dhule, India.
- Tammaro, A. M. (2020). COVID-19 and Libraries in Italy. *International Information & Library Review*, 52(3), 216–220. <https://doi.org/10.1080/10572317.2020.1785172>
- Tsekea, S., & Chigwada, J. P. (2021). COVID-19: Strategies for positioning the university library in support of e-learning. *Digital Library Perspectives*, 37(1), 54–64.
- UNESCO. (2021). *Media & Information Literacy Curriculum for Educators & Learners*. United Nations Educational, Scientific and Cultural Organization.
- UoC. (2020, November 17). *Library life in the time of COVID*. University of Cambridge. Retrieved from <https://www.cam.ac.uk/stories/library-covid-life-1>
- Vassilakaki, E., & Moniarou-Papaconstantinou, V. (2021). Library space and COVID-19: Rethinking of place and re-designing of digital space. In *Libraries, digital information, and COVID* (pp. 207–213). Elsevier.
- Walsh, B., & Rana, H. (2020). Continuity of academic library services during the pandemic the University of Toronto libraries' response. *Journal of Scholarly Publishing*, 51(4), 237–245.
- Walia, P. K., & Gupta, M. (2012). Application of web 2.0 tools by national libraries. *Webology*, 9(2), 21–30.
- Wittenberg, J., Sackmann, A., & Jaffe, R. (2018). Situating Expertise in Practice: Domain-Based Data Management Training for Liaison Librarians. *The Journal of Academic Librarianship*, 44(3), 323–329. <https://doi.org/10.1016/j.acalib.2018.04.004>