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Comprehensive assessment of drivers and barriers to electronic information resources usage in academic libraries in Uganda using SWOT analysis

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ABSTRACT

The high costs of printed Textbooks have negatively affected the education and library services in many developing countries, forcing institutions and universities to utilise electronic information resources (EIRs) to offer library information services and resources to library users. Many universities in northern Uganda adopted EIRs without evaluating them. This study, therefore, seeks to assess the drivers and barriers to EIR usage in academic libraries in Uganda by analysing their strengths, weaknesses, opportunities, and threats (SWOT). The study employed a descriptive design to collect quantitative data and a stratified random sampling technique to select the sample size. A structured questionnaire was designed using Google Forms and administered online to the Muni and Lira universities' teaching staff and final-year students, where 103 were filled by teaching staff and 248 by final-year students. The data collected were analysed using the SPSS Version 28 and RStudio software. Statistical techniques like descriptive analysis were used in the data analysis. The results for the mean ≥ 3.41 were considered statistically significant. The study findings show that most respondents agreed that librarians expose them to all the library EIRs and that it was essential to access EIRs to benefit from its services. The study also identified knowledge and skills, the relevance of EIRs, availability of technological infrastructure and resources, awareness and adaptation, perceived ease of use and access, previous experience, institutional policies, and perceived quality content as the critical drivers for the usage of EIRs in academic libraries. The results of the SWOT analysis identified internal factors (i.e., strengths and weaknesses) and external factors (i.e., opportunities and threats) affecting EIR usage in Ugandan academic libraries. The survey recommends that for the successful adoption and implementation of EIRs in Ugandan libraries, there should be a reliable power supply and internet connectivity for easy access to the EIRs, purchase of more computing devices for accessing the EIRs, training and supporting the users of EIRs in universities; proper accountability and use of donor funds meant for payments of EIRs; and so on. These findings generated ideas that the universities, libraries, and library consortia can use in decision-making regarding choices of EIRs selection and the procurement of EIRs to realise value for money.

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1. Introduction

The expensive cost of setting up and maintaining a physical library, coupled with the closure of the physical

doors of library buildings in Uganda due to COVID-19 at the beginning of the year 2020, made some libraries struggle to help their clients utilise the available library information services and resources. The urge for library services increased when the government allowed institutions to conduct online classes through Open Distance

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and Electronic Learning (ODEL). Learners, teaching staff and researchers require information services for running their businesses, and using EIRs is handy. However, their adoption and use in low-income countries is a concern raised by some scholars due to the infrastructural challenges, limited relevant electronic information content in eBooks eJournals, and little knowledge of the usage of EIRs.¹⁻³

In Uganda, most academic libraries provide digital and print library resources to their clients for convenient and reliable information⁴⁻⁶ define EIRs as digital resources like eDatabases, eJournals, eBooks, CD-ROMs, digital archives, intranet and web-based technologies. Mukhtar and Maidabino (2021) and Merande et al. (2021)^{7,8} add that these are information resources offered in electronic format by libraries to their clients to be accessed using digital machines such as computers, tablets, and smartphones. Some of the EIRs are online resources (e.g., e-books, e-journals, e-newspapers, e-databases, e-patents, e-standards, e-theses, scientific web resources, Online Public Access Catalogue (OPAC), e-clippings, e-forums, e-magazines, e-newspapers, digital repositories, e-mail publishing, bibliographic databases, search engines, and e-blogs) or offline resources (stored on CD-ROM, DVD, & magnetic tapes).⁸⁻¹¹

The EIRs are essential resources for contemporary library services that offer a vital supportive role in the conduct of research.^{1,12} and improve teaching staff effectiveness and productivity in facilitating teaching and learning.¹³ EIRs are prevalent in contemporary libraries because of their availability anywhere and anytime, ease of amending and update, portability, multiple access to one resource by many users, ease of print and save, searchability, and relatively cheap, especially the open-access resources.^{1,10,14,15}

Northern Uganda is one of the historically disadvantaged regions, a semi-rural area with poor electricity connectivity, poor ICT infrastructure, and students and teaching staff from underprivileged backgrounds.¹⁶ It is blessed with three (3) public universities, two (2) private universities and four (4) constituent colleges of other Ugandan universities. The public universities include Gulu University, Muni University and Lira University. At the same time, the private universities are Nile University and Sacred Heart University. The law governing universities and other tertiary institutions mandates that all higher institutions have their well-stocked library(ies) with relevant textbooks, ICT equipment, and software and managed by professional library staff (i.e., library assistants, assistant librarians, librarians, senior librarians, and university librarians). This study was carried out at Muni University and Lira University. The choice of these universities was based on the fact that they are fully paid-up members of the Consortium of Uganda University Libraries (CUUL), paid for the subscription of electronic

resources in 2021 and have access (both on-campus and off-campus) to a variety of learning EIRs.

Membership in CUUL enables the member institutions to benefit from the collective bargaining power for better access to electronic resources. The consortium prices for EIR's license fees are relatively lower for the members than paying individually. Member institutions have access to millions of eJournals articles and eDatabases, subscribed through CUUL,^{17,18} these resources are accessible over the Internet through the library websites and CUUL website. Although Ugandan university libraries invested in acquiring EIRs, the resource usage is low. This has been reported by CUUL every year in their annual general assemblies attended by the researchers. The low use of these resources worries librarians because the statistics do not show value for money spent on subscriptions to these resources.

Despite the investments in EIRs and services in some libraries in Uganda, their effectiveness has not been assessed. In unusual situations, such as the one created by the COVID-19 crisis, the library information services and resources are tested.¹³ Therefore, it is paramount that libraries assess drivers for the usage of EIRs and how relevant the current resources and services are to their clients by evaluating their internal competencies and shortcomings and the opportunities and threats from the surrounding so that effective strategies can be considered for offering better services to the community. The SWOT analysis is a valuable means by which libraries assess themselves with the environment in which they operate. An evaluation study needs to establish the reasons for the low usage of these resources. Otherwise, the teaching staff may not effectively gain from the role of libraries in supporting them to execute their core teaching-learning, research, and community engagement mandates. This justifies why this study is essential in assessing the drivers and barriers to EIRs usage in academic libraries in Uganda using SWOT Analysis by teaching staff and final year students of Muni and Lira universities.

Most studies on SWOT analysis on EIRs in libraries are from developed nations. Students and teaching staff who influence the selection and usage in developing countries such as Uganda have not been given priority, yet the reading culture is poor, and the use of EIRs is so low. This study focused on teaching staff and final year students in a semi-rural part of northern Uganda universities to minimise the gap. The study findings will generate ideas that the universities, libraries, and library consortia can use in decision-making regarding choices of EIRs selection. The study attempted to answer the following research questions to achieve the main aim:

1. What is the level of awareness of the teaching staff and final year students on the EIR's usage in Uganda's academic library(ies)?

2. What are the drivers for using EIRs in academic libraries in Uganda by the teaching staff and final-year students?
3. What are the strengths, weaknesses, opportunities, and threats (SWOT) of using EIRs in Ugandan academic libraries?

The remainder of this paper is structured as follows: Section 2 discusses the relevant related work about EIRs usage and awareness in academic libraries, drivers for the usage of EIRs in academic libraries in Uganda, and the SWOT analysis of EIRs. Section 3 describes the materials and methods used in the study; Section 4 presents the analysis of the results. A detailed discussion of the results is presented in Section 5, While Section 6 presents conclusions and recommendations.

2. Related Work

2.1. Use of EIRs in academic libraries

Researchers, teaching staff, and students use EIRs for various purposes, such as academic purposes (i.e., course works, completing assignments, research, compiling teaching and learning materials, preparing seminar presentations, and disseminating and preserving research findings), acquiring development ideas, communicate and collaborate with friends and classmates, improve knowledge, online registration, materials for a writing project, career development, efficient retrieval of information, curriculum design, and recreation.^{5,15,19–26}

Electronic information resources in academic libraries are essential to researchers, teaching staff, and students because they provide a comprehensive and vast amount of information that users can quickly and cheaply access in electronic forms in its latest form:^{5,10,27} it helps users to advance their research work;²⁸ it is readily available as long the users have access to the network or internet connectivity;⁴ flexible in terms of storage and interoperable since they are dynamic resulting into the wide dissemination of information; convenience since a piece of data can be easily searched,^{5,6} EIRs can easily and simultaneously be accessed by multiple off-campus users in a short period;⁸ EIRs are up-to-date, trustworthy, and appropriate, access a wide variety of information, and the time and location of access are unlimited and unrestricted and saves physical spaces.^{6,29} Mollel and Mwantimwa (2019)¹³ observed that library EIR usage depends on the relevancy of the content and users' skills to navigate the different electronic resource platforms, search engines, and interfaces. The authors further alluded that the usage of EIRs increases not only when the library avails resources and services that meet their users' demands but also when they own the required skillsets for accessing the EIRs. Tlakula and Fombad (2017)³⁰ emphasised the importance of possessing needed skills. They assert that library users can effectively utilise

the library services by expanding the information literacy programmes to all students and academics.

2.2. Electronic information resources awareness in academic libraries

Through the awareness of EIRs in academic libraries, the academic community has widely adopted and used electronic resources to meet their information needs. Understanding of EIRs looks at the users' knowledge and skills for accessing and using the available electronic resources effectively and efficiently anytime and anywhere when needed. These knowledge and skills help the users to be aware of the available means for accessing electronic information.

EIRs and library services were anticipated to increase in the COVID-19 era.^{3,31} However, this would be possible if the libraries developed effective response plans and strategies. With the increasing rate at which higher learning institutions progressively adopt and adapt online learning, libraries' role in providing online content will be paramount. As such, Mbambo-That (2020)³¹ advocated that libraries should develop digital library usage plans consisting of awareness creation, marketing library EIRs, online support services, subscribing to relevant EIRs content for the academic programmes, evaluation of its online service provision, and negotiating with publishers for a reduction in subscription fares.

The low usage of EIRs in Africa became a concern for many librarians; hence, studies were done, and the results varied from one study to another. For example, the survey conducted by Leonard et al. (2020)¹⁵ on electronic resources by law academics at the University of Namibia found that 100% of the Law faculty members were aware of the e-resources subscribed to, although the usage of the resources remained low. The studies by Yebowaah (2017),³² Ahmed and Al-Reyae (2017),³³ and Adeleke and Nwalo (2017)³⁴ reported that the majority of the users were aware of electronic resources and also highlighted the benefits of the awareness of EIRs to the academic community. Similarly, Ncube and Tarumbira (2016)³⁵ studied using e-resources at the Zimbabwe Open University Midlands Library. The results revealed that 75% of users were aware of e-resources in the library. Another study in Nigeria also found that postgraduate students were aware of EIRs and used them in the library.^{36,37} A similar study by Chepukaka (2017)³⁸ in Kenya found that 100% of respondents knew of the EIRs. However, the study concluded no positive relationship between awareness and actual usage of the EIRs. Besides, a similar study in Nairobi, Kenya, found awareness and use of electronic resources to be high among male students.³⁹

Meanwhile, in Uganda, Gakibayo et al. (2013)⁴⁰ studied EIR usage by students at Mbarara University Library; they found that students lacked awareness of the resources and

their relevancy. A related study in Uganda at Nkumba University on factors influencing access and usage of e-resources¹⁸ recommended that librarians spend more time mastering their EIRs contents to create awareness about them in the University community. In addition to the creation of awareness of the EIRs among faculty members, Henda (2020)²³ is of the view that the collection and development of the EIRs should be done collaboratively between the librarians and the faculties they serve so that the items selected and procured are the right ones needed by the teaching staff. The collaborative work between teaching staff and librarians enhances relevant collection development and establishes a communication link between the library and the faculty.

2.3. Drivers for the usage of eirs in academic libraries

The literature review identified some essential drivers motivating the usage of EIRs in academic libraries, and are discussed below:

2.3.1. User competence and skills

Skills for information retrieval and evaluation are essential for the optimal utilisation of EIRs.¹⁰ To effectively use EIRs for teaching, learning and carrying out research in the era of information explosion, one must possess a set of skills for defining the problem at hand, identifying the right source of information, retrieving accurate, relevant, and recently published reports.^{41,42} The required skills for utilising EIRs have been elaborated on in many studies and must be tackled to better search, retrieve, evaluate, and use the articles.^{15,22,23} Tlakula and Fombad (2017)³⁰ believe that the cause of the lack of skills for the search and usage of EIRs in academic libraries is due to inadequate guidance given by librarians. Appointing faculty liaison librarians offers a better alternative.⁴³ The authors further argued that faculty librarians who work with academics and researchers enhance collections of relevant EIRs and create awareness. This means that when the relationship between librarians and faculty is good, a conducive environment will be catalysing EIR usage.

2.3.2. Relevance of EIRs

The relevance of EIRs to a teaching staff matters a lot in their usage. A study conducted by Machimbidza and Mutula (2020)⁴³ in Zimbabwe established that academics do not adequately use EIRs in their institutions because their libraries subscribe through consortiums that do not address their need. The decisions of consortia on what to subscribe to are majorly on resources that benefit many institutions with less focus on subjects unique to faculties.¹⁴⁻⁴³

2.3.3. Technological infrastructure and resources

Tlakula and Fombad (2017)³⁰ and Isibika and Kavishe (2018)⁴¹ suggest that EIRs are facilitated in an environment

where technological infrastructure such as intranet and internet connectivity is good and fast, computing hardware and software, and human resources with the skill set to offer support services. Faster internet connectivity is essential for accessing some electronic resources.¹⁰ In the view of Chepukaka (2017),³⁸ human support services are critical in user training, troubleshooting, and mind-changing for those who have negative attitudes towards EIRs.

2.3.4. Institutional policies

Chepukaka (2017)³⁸ suggested developing institutional policies that support and promote electronic resources to develop teaching and learning materials and support decision-making and development of institutional operational documents such as guidelines to achieve maximum utilisation of EIRs in an institution. Chepukaka (2017)³⁸ further adds that institutions whose ICT-related policies recognise the importance of technology advancement in their operations will facilitate the usage of EIRs.

2.3.5. Ease of usage and access to EIRs

Chepukaka (2017)³⁸, Isibika and Kavishe (2018)⁴¹ and Leonard and Snyman (2019)¹ observe that EIRs are easier to use once library users know where to access these resources. Creating access points such as websites and library online catalogues with clear labels for electronic resources makes it simple for the users to notice and access them. However, Bwalya and Ssebale (2017)¹⁸ note that the requirement for passwords every time a user attempts to access a resource from the library discourages library users from using EIRs. This is because contemporary computer users have too many login passwords that they hardly remember.

2.3.6. Perceived usefulness

Perceived usefulness in the context of EIRs usage is defined as the degree to which users believe that using EIRs would enhance their job performance (Azonobi et al., 2020).⁴ When the students and teaching staff efficiently use EIRs, they influence other academic communities to embrace them.⁴⁻³⁶

2.3.7. Self-Efficacy

Self-efficacy refers to one's belief that using the EIRs can achieve the required goals. Users with computer skills and high self-efficacy can access and search the EIRs from academic libraries to achieve their primary goal. However, people with low self-efficacy in EIRs are expected to access less electronic information.⁴

2.3.8. Trust

Azonobi et al. (2020)⁴ define Trust as the reliance on the ability and strength of EIRs. When EIRs are trustworthy,

the academic community will use them to access their information needs.

2.3.9. *Social factors*

According to Isibika and Kavishe (2018)⁴¹ and Azonobi et al. (2020),⁴ researchers, teaching staff, and students are motivated to use EIRs by their peers who are already using them.

Other drivers influencing teaching staff and final-year students to adopt the usage of EIRs in academic libraries are convenience, searching skills, quality information, and exposure to EIRs.^{33–41}

2.4. *The SWOT analysis of EIRs*

Providing quality service to customers is essential for most institutions, including libraries. Several tools are developed to guide the evaluation of the quality-of-service provision; one such tool, according to Harris (2018),⁴⁴ is the SWOT analysis. Kaushik (2018)⁴⁵ defines SWOT analysis as a “framework which can be used as a tool for strategic planning and decision-making in implementing a product, concept, project, successfully” (p. 11). In libraries, SWOT analysis is a valuable tool for strategic planning in understanding its strengths and opportunities to mitigate possible threats and weaknesses.⁴⁶ SWOT analysis also helps libraries measure their impact on the faculties and community they serve, primarily by establishing their contribution to institutional research output⁴⁷ and measuring the relevance of the libraries’ EIRs to their community.⁴⁸ The outcome of the SWOT analysis is expected to help the library address areas where EIRs’ performance is not good by capitalising on their strengths and available opportunities in their environment.

2.4.1. *Strengths*

Kumar (2012)⁴⁶ defines strength as the advantage(s) an institution gains in using a resource or possession much needed to achieve its goals and objectives. In this paper, the strength of the EIRs is measured as a contributor to the achievement of library goals and objectives of the faculty members. EIRs promote multiple access to library resources anytime and everywhere without limit.⁴⁹ The author further asserts that EIRs improve library users’ interactivity with electronic items. Users can browse, copy, and paste content from a given resource and quickly transfer it to a word processing software to easily develop a document or manuscript. Makozho (2020)² adds that EIRs are authentic and trusted research sources because their content undergoes peer review before publication is made available. Relatedly, Chepukaka (2017)³⁸ opined that EIRs help academics address the challenge of outdated print reading materials in the library by providing an alternative updated learner study material with recently

published references. According to Yang (2012),⁵⁰ digital libraries promote quicker user interaction with librarians (online reference services). The network environment in which digital libraries operate enables on-site and off-site information sharing. Electronic resources are portable – a user can hold a library of over a thousand electronic books and journals in their hand through a mobile device to search within the electronic resource item and copy and paste the content.¹

A similar study done in Kerala (India) academic libraries by Kumar (2012)⁴⁶ found that contemporary library users benefit from their libraries because librarians possess training skills, computing equipment and a fine collection of electronic resources. Chepukaka (2017),³⁸ Mbambo-That (2020),³¹ and Kumar (2012)⁴⁶ found that contemporary libraries are supporting their stakeholders by having access to their electronic library resources and services remotely without being in a library building through the use of a virtual private network (VPN) software such as RemoteXs and EZproxy access platforms that make the library resources accessible outside the institution public internet coverage. Most contemporary academics are computer-competent and frequently use them daily.⁴² ICT skills are essential enablers of using EIRs in an institution.¹⁵ Similarly, the appointment of faculty librarians has opened an opportunity for libraries to collaborate with their faculty members in areas of EIR selection and promotion of their usage.^{15–48}

2.4.2. *Weaknesses*

According to Kumar (2012), a weakness is a “debility, fault, defect, or limitation in the organisation that prevents the achievements of its objectives”. Access to EIRs is limited to several issues in developing nations. Darandale (2017)⁴⁹ noted that most EIRs are not locally published. The institutions that subscribe to them do not control their usage and accessibility due to their strict terms and conditions. In addition to that, Dehigama and Dharmarathne (2015)⁵¹ and Azonobi et al. (2020)⁴ observed that most traditional librarians are not technologically competent for the task at hand in managing and providing support to their users to access EIRs. Makozho (2020)² and Liasu and Bakrin (2022)²⁶ noted that some of the weaknesses of the use of EIRs include a lack of digital literacy skills and information overload due to several EIRs in libraries, multiple password login requirements and the regular changes of these passwords by librarians for security reasons and not communicating these changes to library EIRs users. Other significant weaknesses of relying on EIRs as library resources are unawareness, lack of ICT infrastructure, lack of training, inadequate availability of the resources in libraries, lack of constant power supply, discomfort in reading electronic resources due to the rays emitted from the computer monitors,

difficulty of identifying relevant information for the users' needs^{6,8,13,24,26,52,53} Leonard and Snyman (2019)¹ pointed out the "in-compatibility" and file format issues of eBooks that cannot be read on some computers that do not have the required software. These formats include Adobe Digital Edition, Portable Documents Formats (PDF), and Mobi.

2.4.3. Opportunities

Studies by Kumar (2012)⁴⁶ and Sohail and Ahmad (2017)¹² believed that institutions stand to benefit from EIRs only when there is an enabling environment. The rapid expansion of mobile telecommunication networks with the reduced internet data prices in Uganda, according to Ali et al. (2019),¹⁶ is an enhancer of access to electronic learning resources. Darandale (2017)⁴⁹ observed that EIR publishers had promoted multidisciplinary research to one publication benefiting many disciplines. The author noted that libraries have software to buy to enable blind people to read EIRs.

2.4.4. Threats

Access to EIRs requires payment of subscription fees; unfortunately, the ever-increasing costs of procuring some of the EIRs constrain accessing and retrieving full-text content needed for the intended function (Hendal, 2020),²³ The limitations of intellectual property rights on how much a given resource can be used and shared, the unfriendly copyright laws also limit the usage of EIRs,^{50,54} safety questions about network securities and the use of personal data collected by EIRs platforms and publishers.⁵⁰ Some of the EIR's publishers/platforms find searching and downloading content challenging due to the platforms' poor design interfaces, especially those without a search engine. As such, library users prefer to use Google for their research studies because it is user-friendly and easy to retrieve resources,^{2,23} and some library resources are not easily accessible because the library websites where the EIR's links are hosted are not well organised, and others are off most of the time when needed.² Likewise, the inaccessibility of EIRs due to the public internet restrictions and poor marketing strategies of the library's electronic resources and services were noted as a weakness in using EIRs in libraries.^{31–38} Ternenge and Kashimana (2019),⁵⁵ Achugbue and Ahimbisibwe (2020),²⁴ Leonard et al. (2020),¹⁵ Makozho (2020),² Merande et al. (2021),⁸ and Liasu and Bakrin (2022)²⁶ further reported that inadequate electricity supply and stability, poor internet connectivity in rural areas and low bandwidth, low publicity, and the unfavourable changes in use agreements terms by EIR's publishers and aggregators are some of the threats to EIRs usage. Finally, dwindling donor support to libraries has been noted as a threat to the sustainability of the payment of EIRs in academic institutions of learning in developing countries such as Uganda.⁵⁶ This may affect their adaption as learning materials in the long run by academics.

3. Materials and Methods

3.1. Study design

The survey study adopted a descriptive research design to collect quantitative data from the study area concerning the current status of the phenomena. An online questionnaire using Google Forms was used to collect quantitative data from the respondents. A scenario-based questionnaire was developed and pre-tested with a few respondents, and the outcome was applied to improve some questions. The questionnaire contained questions targeted at soliciting answers to the research questions - (a) What is the level of awareness of the teaching staff and final year students on the current EIRs at their university library(ies)? (b) What are the drivers for using EIRs in academic libraries in Uganda by the teaching staff and final-year students? (c) What are the strengths, weaknesses, opportunities and threats of using EIRs in Ugandan academic libraries? Ethics committees approved the research.

3.2. Sample technique

The study was conducted in two (2) public universities in Northern Uganda, i.e., Muni and Lira Universities, and the target respondents are teaching staff and final-year students. The choice of the study is influenced by an assumption that if the academics use the EIRs, their students will also likely use the resources. A stratified random sampling technique was used in this research to group the population into strata of teaching staff and final-year students. This helps to get more precise estimates for each stratum because it is more homogeneous than the total population. By estimating each part more precisely and accurately, the researcher gets a better estimate of the whole. The Yamane formula below was used to establish the sample size for the study with a 95% confidence level (Yamane, 1973).

$$n = \frac{N}{1 + Ne^2}$$

3.3. Data collection and analysis

A structured questionnaire was designed and divided into three (3) parts - the social demography characteristic of respondents, such as the respondent's gender, qualification, school/faculty, and duration of EIR usage. The second part covered the awareness and drivers for the usage of EIRs in academic libraries in Uganda. Finally, the third part was a five-point Likert scale covering the SWOT analysis of EIR's use in Ugandan academic libraries. Closed-ended questions and a five-point Likert scale were employed for the study. In a population of 140 teaching staff and 700 final-year students in both Muni and Lira Universities, a sample size of 104 teaching staff and 254 final-year students were selected using the Yamane formula. Only final-year students were considered for the study because

they were the only students attending online classes and using EIRs during data collection due to the lockdown. Out of 358 online administered questionnaires, 244 (68.2%) fully completed questionnaires were returned, of which 67 (27.5%) were filled by teaching staff and 177 (72.5%) by final-year students of the two universities, with a response rate of 68.2%. The collected data were analysed using SPSS Version 28 and RStudio software. Statistical techniques like descriptive analysis (i.e., percentages, means, standard deviations, and graphs) were used in the data analysis. For five-point Likert scale data, results for the mean ≥ 3.41 were considered statistically significant.⁵⁷

4. Results

The findings from this research are structured into three (3) sections. i.e., social demography characteristics, awareness, and drivers for the usage of EIRs in academic libraries in Uganda, and SWOT analysis of EIRs usage in Ugandan academic libraries to answer the research questions.

4.1. Social demography characteristics

4.1.1. Respondents' gender, school/faculty, and duration of eirs usage

Eight-two-point one percent, one percent of the teaching staff, were male, 17.9% were female, none preferred not to say; 68.4%, 31.1%, and 0.6% were male, female, and like not to say in case of the final year students, respectively; 6.0% of the teaching staff belong to the Faculty of Education, 23.9% to Faculty of Technoscience, 26.9% to Faculty of Health Sciences, 19.4% to Faculty of Science, 14.9% to Faculty of Management Science, and 9.0% to Faculty of Agricultural & Environmental Sciences. In contrast, 29.4%, 7.9%, 48.0%, 14.1%, and 0.6% of final-year students belong to the Faculties of Education, Technoscience, Health Sciences, Science, and Management Science. Concerning the duration of EIR usage, 9.0% of the teaching staff reported using EIRs for less than 1 year, 37.3% between 1–5 years, and 53.7% for more than 5 years. For final year students, 7.9% used for less than 1 year, 83.6% between 1–5 years, and 8.5% for more than 5 years. The findings from the analysis are summarised in Table 1.

4.1.2. Respondents' qualification (teaching staff, study programme level, and programme name (students

Nineteen-point-four percent of the teaching staff have bachelor's degrees, 62.7% have Master's degrees, and 17.9% have PhD, as shown in Figure 1.

Eighty-three-point one percent of the final year students are offering bachelor's degree courses, 16.9% offer master's courses, and no student is undertaking a PhD course, as shown in Figure 2.

Thirty-three point nine percent of the final year students are offering a Bachelor of Nursing Science and Midwifery,

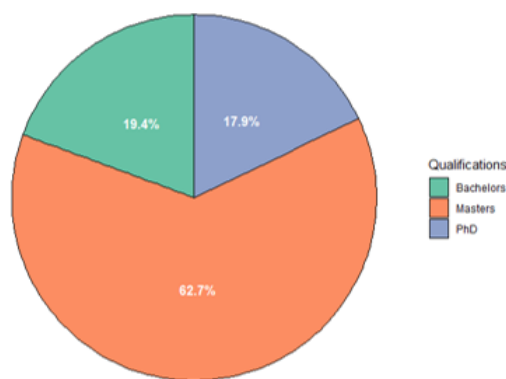


Figure 1: The qualifications of the teaching staff.

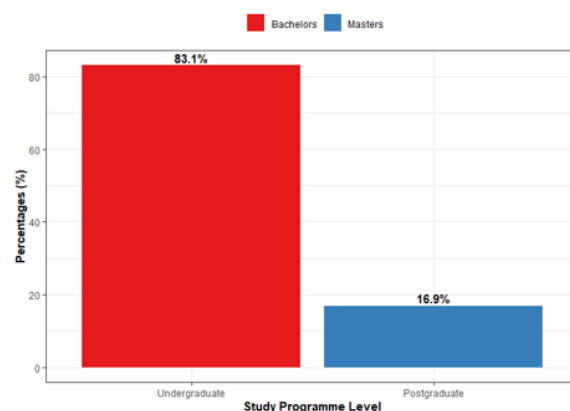


Figure 2: The students' study programmes levels.

29.9% offer a Bachelor of Science with Education, 7.3% offer Masters of Public Health, 6.8% offer a Bachelor of Public Health, 6.2% offer Masters in Public Administration and Management, 5.6% offering Bachelor of Information Systems, 4.0% offering Executive Masters of Business Administration, 2.8% offering Bachelor of Business Administration, 1.7% offering Bachelor of Science in Information Technology, 1.1% offering Bachelor of Commerce, and 0.6% are offering Bachelor of Information Technology, as shown in Figure 3.

4.1.3. Respondents' Opinion about Types of EIRs Available to Academic Library Users of Muni and Lira Universities.

The results in Table 2 indicate that all EIRs are accessed and used by Muni and Lira University library users. The most frequently used EIRs in the academic libraries of the two universities are e-books (99.2%), e-journals (98.8%), e-Theses/Dissertations (94.7%), e-Standards (94.3%), Internet Services (93.4%), e-Reports (92.2%), e-Databases (87.7%), and Institutional Repositories (85.7%). At the same time, e-Newspapers (36.1%) and CD-ROM (15.6%)

Table 1: Respondents’ gender, school/faculty, and duration of EIR usage.

No	Variable	Teaching Staff No. (%)	Students No. (%)
Gender			
1	Male	55 (82.1)	121 (68.4)
	Female	12 (17.9)	55 (31.1)
	I prefer not to say	0 (0.0)	1 (0.6)
School/Faculty			
2	Education	4 (6.0)	52 (29.4)
	Technoscience	16 (23.9)	14 (7.9)
	Health Sciences	18 (26.9)	85 (48.0)
	Science	13 (19.4)	25 (14.1)
	Management Science	10 (14.9)	1 (0.6)
	Agricultural & Environmental Sciences	6 (9.0)	0 (0.0)
Duration of EIRs Usage			
3	Less than 1 year	6 (9.0)	14 (7.9)
	Between 1-5 years	25 (37.3)	(83.6)
	More than 5 years	36 (53.7)	15 (8.5)

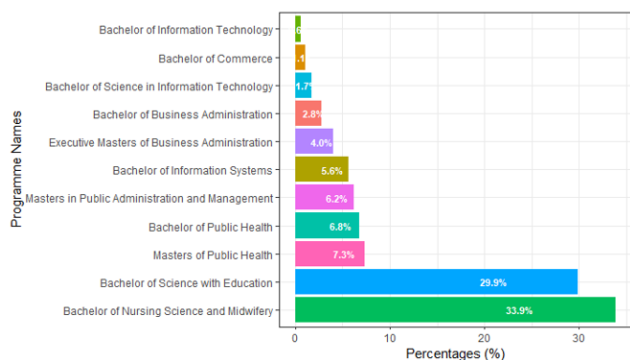


Figure 3: The names of programmes offered by the final year students.

are the least-used EIRs in the academic libraries of Muni and Lira Universities.

4.2. Respondents’ Opinion about the Purpose of using the EIRs

Table 3 shows that 237(97.1%) respondents use EIRs for academic purposes, i.e., doing research and assignments, compiling teaching and learning materials, and preparing seminar presentations. This is followed by 231(94.7%) of the participants who used it for acquiring development ideas, 225(92.2%) to improve their knowledge, 216(88.5%) for efficient retrieval of information, 205(84.0%) for career development, 189(77.5%) for curriculum design and development, 183(75.0%) to communicate and collaborate with friends and classmates, 178(73.0%) for online registration, 175(71.7%) for recreational purposes, and 170(9.7%) to read current news.

4.3. Awareness and Drivers for the Usage of EIRs in Academic Libraries

One of the objectives of this study is to establish respondents’ perceptions regarding their awareness and drivers for using EIRs in academic libraries. A five-point Likert scale was used to ascertain the respondents’ opinions. Mean and standard deviations were computed to assist the research conclusion.

4.3.1. Respondents’ Exposure to all the Library EIRs by Librarians

The study establishes the respondents’ opinions regarding their exposure to all the library EIRs by the librarians. Decisions were made based on the percentages, mean, and standard deviations calculated. Table 4 shows the respondents’ opinions regarding their exposure to all the library EIRs by the librarians.

Table 4: Opinion of respondents regarding their exposure to all the Library EIRs by Librarians.

No	Statement	SD	D	N	A	SA	M	SD
1	Librarians expose library users to all the library EIRs.	4.9	4.9	7.8	51.6	30.7	3.98	1.014

sd=strongly disagree, d=disagree, n=neutral, a=agree, sa=strongly agree, m=mean, and sd=standard Deviation.

From Table 4, most respondents (51.6%) agreed that librarians expose library users to all the library EIRs (M = 3.98, SD = 1.014). Therefore, it was statistically significant to conclude that librarians expose library users to all the

Table 2: Respondents’ opinion on frequently used EIRS in academic libraries of muni and lira Universities.

No	Available EIRS in Academic Libraries	Yes	No
1	e-Books	242(99.2)	2(0.8)
2	e-Journals	241(98.8)	3(1.2)
3	e-Theses/Dissertations	231(94.7)	13(5.3)
4	e-Standards	230(94.3)	14(5.7)
5	Internet Services	228(93.4)	16(6.6)
6	e-Reports	225(92.2)	19(7.8)
7	e-Databases	214(87.7)	30(12.3)
8	Institutional Repositories	209(85.7)	35(14.3)
9	Library Websites	165(67.6)	79(32.4)
10	e-Newspapers	88(36.1)	156(63.9)
11	CD-ROM	38(15.6)	206(84.4)

Table 3: Respondents’ opinion on the reasons for using EIRs.

No	Reasons for using EIRs by Academic Library Users	Frequency	Percentage
1	For academic purposes such as doing research and assignments, compiling teaching and learning materials, and preparing seminar presentations	237	97.1%
2	For acquiring development ideas.	231	94.7%
3	To improve knowledge.	225	92.2%
4	For efficient retrieval of information.	216	88.5%
5	For career development	205	84.0%
6	For curriculum design and development.	189	77.5%
7	To communicate and collaborate with friends and classmates.	183	75.0%
8	For online registration.	178	73.0%
9	For recreational purposes	175	71.7%
10	To read current news.	170	69.7%

library EIRs because the mean is greater than 3.41.

4.3.2. Respondents’ Opinion about the Importance of Accessing EIRs

The study establishes the respondents’ opinions regarding the importance of accessing EIRs. The percentages, mean, and standard deviations were calculated to assist in decision-making decisions. Table 4 represents the participants’ opinions regarding the importance of accessing EIRs.

Table 5: Opinion of respondents regarding the importance of accessing EIRs.

No	Statement	NI	SI	MI	I	VI	M	SD
1	It is important to access EIRs.	0.4	3.7	5.3	27.5	63.1	4.49	.793

NI=Not Importance, SI=Slightly Importance, MI=Moderately Importance, I=Importance, VI=Very Importance, M=Mean, and SD=Standard Deviation

The majority of the respondents (63.1%) agreed that it is important to access EIRs (M = 4.49, SD = .793). Therefore, it was statistically significant to conclude that it is important to access EIRs because the mean is greater than 3.41.

4.3.3. Respondents’ opinions on the drivers for using EIRs in academic libraries

One of the objectives of this study is to establish respondents’ perceptions regarding the drivers for using EIRs in academic libraries. Figure 4 summarises the important drivers for using EIRs in academic libraries.

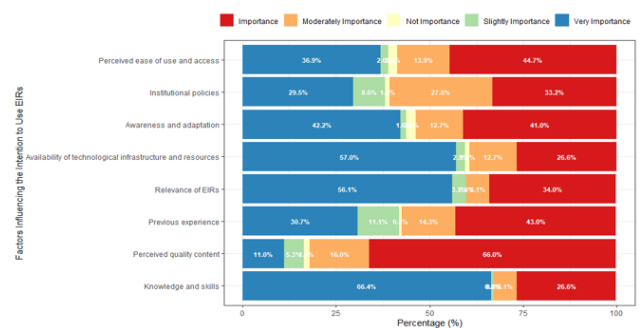


Figure 4: The drivers for the usage of EIRs in academic libraries.

4.4. SWOT analysis of EIRs usage in ugandan academic libraries

This study mainly focuses on the SWOT analysis of EIR usage in Ugandan academic libraries. It is used to analyse

the internal factors (strengths and weaknesses) and external factors (opportunities and threats) affecting EIR usage in Ugandan academic libraries to help the university make a feasible decision.

The respondents' perceptions regarding the SWOT to EIRs usage in Ugandan academic libraries were examined. A five-point Likert scale was used to ascertain the respondents' opinions about the SWOT analysis of EIR usage in Ugandan academic libraries. Mean and standard deviation values were calculated to assist the researchers in concluding in this respect. The findings from the analysis are as indicated in the Tables.

4.4.1. Strengths of EIRs usage in ugandan academic libraries

As for the opinion of the respondents regarding the strengths of EIRs usage in Ugandan academic libraries, the majority of them rated, availability of skilled personnel ($M = 4.34$, $SD = .809$), EIRs are portable ($M = 4.30$, $SD = .895$), meaningful use of study material ($M = 4.25$, $SD = .765$), staff, students' and librarians' willingness to learn ($M = 4.23$, $SD = .872$), multidisciplinary sources of information ($M = 4.19$, $SD = .859$), EIRs are current, authentic and trusted sources of information ($M = 4.18$, $SD = .972$), EIRs platforms are user-friendly ($M = 4.11$, $SD = .898$), staff, students and librarians are computer literate ($M = 4.11$, $SD = .945$), availability of remote access to EIRs ($M = 4.06$, $SD = 1.050$), multiple access to a single resource ($M = 4.04$, $SD = .942$), EIRs are easy to use and facilitate interactivity ($M = 4.03$, $SD = .951$), EIRs are available anytime and anywhere ($M = 3.94$, $SD = 1.160$), it makes it easy to interact with librarians online ($M = 3.91$, $SD = 1.056$), and university readiness to fund and support EIRs ($M = 3.80$, $SD = 1.108$) high. Therefore, it was statistically significant to conclude that those mentioned above are the strengths of EIR usage in Ugandan academic libraries because their means are greater than 3.41.

4.4.2. Weaknesses of EIRs usage in Ugandan academic libraries Table 7

About the opinion of the respondents regarding the weaknesses of EIRs usage in Ugandan academic libraries, the majority of them rated the absence of local content ($M = 4.09$, $SD = 1.115$), low bandwidth and unstable Internet ($M = 4.49$, $SD = .829$), dependent on internet connectivity ($M = 4.32$, $SD = 1.008$), the heavy workload at the workplace for faculty members limits their time to search, retrieve and evaluate EIRs to be used for teaching and learning ($M = 4.11$, $SD = .930$), negative attitudes of some faculty members and students towards new technology and reading nonprint resources ($M = 3.95$, $SD = 1.088$), the resistance of some lecturers to adopt change and new technology ($M = 3.88$, $SD = 1.092$), too many password requirements to access the resources ($M = 3.84$, $SD = 1.150$), lack of commitment

among faculty members to use EIRs ($M = 3.75$, $SD = 1.211$), difficulty to search and access electronic resources from publishers' portals ($M = 3.75$, $SD = 1.106$), limited support for faculty members on the use of EIRs ($M = 3.75$, $SD = 1.066$), limited competencies of faculty members on the use of EIRs ($M = 3.70$, $SD = 1.192$), lack of computing devices for accessing the resources ($M = 3.69$, $SD = 1.290$), and lack of institutional support ($M = 3.69$, $SD = 1.218$) high. Therefore, it was statistically significant to conclude that those mentioned above are the weaknesses of EIR's use in Ugandan academic libraries because their means are greater than 3.41.

4.4.3. Opportunities in the usage of EIRs in Ugandan academic libraries Table 8

On the opinion of the respondents regarding opportunities for the usage of EIRs in Ugandan academic libraries, the majority of them rated the adoption of ODEL in educational institutions due to COVID ($M = 4.14$, $SD = 1.062$), the availability of multidisciplinary journals increases access to a variety of EIRs ($M = 4.11$, $SD = 1.020$), user-friendliness of EIRs search engines ($M = 4.03$, $SD = .949$), and expansion of internet connectivity programmes by governments and the private sector ($M = 4.02$, $SD = 1.156$) high. Therefore, it was statistically significant to conclude that those mentioned above are the opportunities for using EIRs in Ugandan academic libraries because their means are greater than 3.41.

4.4.4. Threats to the usage of EIRs in Ugandan academic libraries Table 9

The majority of the respondents rated the threats in Table 9 high and agreed that unreliable internet connectivity and shut down by the government ($M = 4.60$, $SD = .650$), unreliable power supply ($M = 4.28$, $SD = 1.044$), ever-increasing subscription fees for the EIRs ($M = 4.05$, $SD = 1.175$), unfriendly intellectual property rights (copyright issues) ($M = 3.98$, $SD = 1.034$), ever-increasing cyber-attacks and other online securities issues ($M = 3.98$, $SD = 1.117$), dwindling donor funds towards payments of EIRs ($M = 3.95$, $SD = 1.003$), unfavourable changes in use agreement terms by publishers and aggregators ($M = 3.90$, $SD = .997$), and limited publicity for the EIRs ($M = 3.72$, $SD = 1.199$), were the threats to the use of EIRs in Ugandan academic libraries. Therefore, it was statistically significant to conclude that those mentioned above are the threats to using EIRs in Ugandan academic libraries because their means are greater than 3.41.

5. Discussion

The low usage statistics of EIRs in Ugandan academic libraries are a big concern for librarians; hence, this study is needed in Uganda and semi-urban academic libraries. The findings of this study generated ideas that libraries

Table 6: Opinion of respondents regarding strengths of EIRs use in Ugandan academic libraries.

No.	Strengths of EIRs	SD	D	N	A	SA	M	SD
1	Availability of skilled personnel (Faculty members).	0.8	2.5	9.0	36.9	50.8	4.34	.809
2	EIRs are portable.	1.2	4.9	7.4	36.1	50.4	4.30	.895
3	Meaningful use of study material.	0.4	2.9	8.6	47.1	41.0	4.25	.765
4	Staff, Students' and librarians' willingness to learn	1.2	3.3	11.9	38.9	44.7	4.23	.872
5	Multidisciplinary sources of information.	1.2	2.9	13.1	41.4	41.4	4.19	.859
6	EIRs are current, authentic and trusted sources of information.	2.0	4.9	12.7	34.0	46.3	4.18	.972
7	EIR platforms are user-friendly.	1.6	4.1	13.1	43.9	37.3	4.11	.898
8	Staff, Students and librarians are computer literate.	2.0	4.9	12.3	41.0	39.8	4.11	.945
9	Availability of Remote Access to EIRs.	2.9	6.1	16.4	31.1	43.4	4.06	1.050
10	Multiple access to a single resource	1.2	4.5	21.3	34.8	38.1	4.04	.942
11	EIRs are easy to use and facilitate interactivity.	1.2	7.4	13.9	41.8	35.7	4.03	.951
12	EIRs are available anytime and anywhere.	4.1	12.3	8.6	35.2	39.8	3.94	1.160
13	It makes it easy to interact with librarians online.	2.5	9.4	17.6	36.1	34.4	3.91	1.056
14	University readiness to fund and support EIRs	4.9	7.8	20.1	36.5	30.7	3.80	1.108

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree, M=Mean, and SD=Standard Deviation.

Table 7: Opinion of respondents regarding weaknesses of EIRs use in Ugandan academic libraries.

No.	Weaknesses of EIRs	SD	D	N	A	SA	M	SD
1	The absence of local content.	2.5	10.7	11.1	27.0	48.8	4.09	1.115
2	Low bandwidth and unstable Internet	1.6	2.0	5.7	27.0	63.5	4.49	.829
3	Dependent on internet connectivity.	1.2	7.8	9.0	21.7	60.2	4.32	1.008
4	The workload at the workplace for faculty members limits their time to search, retrieve and evaluate EIRs for teaching and learning.	0.4	6.1	17.2	34.4	41.8	4.11	.930
5	Negative attitudes of some faculty members and students towards new technology and reading nonprint resources	2.9	10.2	13.5	35.7	37.7	3.95	1.088
6	The resistance of some lecturers to adopt change and new technology	2.5	12.3	14.3	36.5	34.4	3.88	1.092
7	There are too many password requirements to access the resources	3.7	11.9	17.6	30.7	36.1	3.84	1.150
8	Lack of commitment among faculty members to use EIRs.	5.7	12.7	16.4	31.6	33.6	3.75	1.211
9	Difficulty in searching and accessing electronic resources from publishers' portals	2.9	13.9	17.2	36.9	29.1	3.75	1.106
10	Limited support for faculty members on the use of EIRs	2.9	11.5	20.9	37.7	27.0	3.75	1.066
11	Limited competencies of faculty members on the use of EIRs	5.3	14.8	13.9	36.5	29.5	3.70	1.192
12	Lack of computing devices for accessing the resources.	5.3	18.9	14.8	23.8	37.3	3.69	1.290
13	Lack of institutional support.	3.7	17.2	20.5	23.8	34.8	3.69	1.218

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree, M=Mean, SD=Standard Deviation.

Table 8: Respondents' opinions regarding opportunities for using EIRs in Ugandan academic libraries.

No.	Opportunities for the use of EIRS	SD	D	N	A	SA	M	SD
1	The adoption of ODEL in academic institutions due to COVID.	4.5	3.3	13.1	31.6	47.5	4.14	1.062
2	The availability of multidisciplinary journals increases access to a variety of EIRs.	3.3	4.1	14.8	33.6	44.3	4.11	1.020
3	User-friendliness of EIR's search engines	1.2	5.7	18.9	37.3	36.9	4.03	.949
4	Expansion of internet connectivity programmes by governments and the private sector	5.3	6.1	15.2	27.9	45.5	4.02	1.156

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree, M=Mean, SD=Standard Deviation.

Table 9: Opinion of respondents regarding threats to the use of EIRs in Ugandan academic libraries.

No.	Threats to the use of EIRS	SD	D	N	A	SA	M	SD
1	Unreliable Internet connectivity and shut down by the government.	0.4	0.8	4.1	27.9	66.8	4.60	.650
2	Unreliable power supply.	3.3	5.3	8.6	25.8	57.0	4.28	1.044
3	Ever-increasing subscription fees for the EIRs.	4.9	7.0	16.0	22.5	49.6	4.05	1.175
4	Unfriendly intellectual property rights (copyright issues)	1.6	7.4	22.1	28.7	40.2	3.98	1.034
5	Ever-increasing cyber-attacks and other online securities issues (Theft of personal data).	4.1	7.4	18.9	30.3	39.3	3.98	1.117
6	Dwindling Donor funds towards payments of EIRs	1.2	6.6	25.8	29.1	37.3	3.95	1.003
7	Unfavourable changes in use agreement terms by publishers and aggregators.	1.6	6.6	25.4	32.8	33.6	3.90	.997
8	Limited publicity for the EIRs.	3.7	15.6	20.9	25.0	34.8	3.72	1.199

SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree, M=Mean, SD=Standard Deviation.

and library consortia can use in decision-making regarding choices of EIRs selection and their procurement of EIRs to realise value for money better. The study answered these essential questions in understanding ways of improving the usage of EIRs in northern Ugandan academic libraries. (1) What is the level of awareness of the teaching staff and final year students on the current EIRs at their academic library(ies)? (2) What factors influence teaching staff' and final-year students' intention to use EIRs? (3) What are the strengths, weaknesses, opportunities, and threats of using EIRs in Ugandan academic libraries?

Awareness of EIRs is a facilitator for using these resources in the library; the findings from this study suggest that the users of electronic resources at Muni and Lira Universities are aware of the various EIRs provided to them. This outcome is consistent with the studies conducted by ^{15,32–34,38} who noted that teaching staff were aware of the e-resources, although the usage of these resources remained low. However, this observation contradicts a similar study by Gakibayo et al. (2013).⁴⁰ which found low use of EIRs

due to a lack of awareness. Gakibayo et al. (2013)⁴⁰ and Bwalya and Ssebbale (2017)¹⁸ recommended that librarians effectively market their EIRs to know the resources for effective and efficient usage. The respondents of this study think that the librarians at the two universities effectively did their role of awareness creation service. Now, with some of the restrictions on physical access to libraries and librarians due to COVID-19, librarians should not relax their role of marketing EIRs. This is done online through webinars and the recordings uploaded to YouTube and links shared on library social media platforms such as Facebook pages, Twitter accounts and WhatsApp Groups. Based on the vital role of EIRs in teaching, learning and research, the study participants agreed that EIRs are essential in the conduct of their businesses.

Several drivers for using EIRs in academic libraries in Uganda were identified, such as knowledge and skills. This is in line with the submission of ^{15,22,23,42} who found that to effectively use EIRs for teaching, learning and carrying out research, one must possess a set of skills for defining

the problem at hand, searching, identifying, and evaluating the right source of information, retrieving accurate, relevant, and recently published information; Relevance of EIRs. This finding conforms with what^{14,43} found: the availability of technological infrastructure and resources like the Internet and computers. This finding is reported in another earlier study conducted by,³⁰ who believed that a successful implementation of EIRs requires putting in place technological infrastructures such as intranet and internet connectivity which is good and fast and having computing hardware and software, awareness and adaptation. This finding is similar to the studies of,^{15,38} where it was found that teaching staff were aware of the e-resources. Perceived ease of use and access. This result is logical to the work conducted by,^{15–38} where it was observed that EIRs are easier to use once the library users know where to access these resources and institutional policies. Chepkaka (2017)³⁸ also affirmed that it was noted that developing institutional policies that support and promote the usage of electronic resources to develop teaching and learning materials and support decision-making and development of institutional operational documents such as guidelines. Other factors identified included perceived quality content and previous experience.

The strengths of EIR usage in Ugandan academic libraries identified include the availability of skilled personnel. This outcome is consistent with the studies conducted by,^{31,38} where it was found that contemporary libraries are supporting their stakeholders by having access to their electronic library resources and services remotely without being in a library building through the use of virtual private network (VPN) software such as RemoteXs and EZproxy access platforms that make the library resources accessible outside the institution Public Internet (IP) coverage; EIRs are portable, and one can carry thousands of them in a pocket when saved in a drive. This was noted in previous studies by.¹ Portability makes EIRs user-friendly because they are light to carry by learners. They are portable and easy to use and facilitate interactivity,⁴⁹ meaning the user can easily copy and paste content or print a portion of information from the eCopy; EIRs are current, authentic and trusted sources of information. This was confirmed by,² who asserted that EIRs are regularly published and undergo a thorough peer review, making them authentic and trusted sources of information for decision-making and supporting teaching and learning. These resources are more beneficial to the teaching staff in updating their teaching materials and solving the “yellow notes” problem of repeating outdated references;³⁸ staff, students, and librarians are computer literate. This finding is similar to the studies of,⁴² where it was found that the majority of contemporary academics are computer competent and frequently use them for their daily work. Furthermore, ICT skills are essential enablers of using EIRs in an institution;¹⁵ EIRs are available anytime

and anywhere for library users, making them a better choice. This was confirmed by previous studies such as,^{1,14,15,30} who noted that the Internet made it easier for learners, researchers and teachers to access information to solve their problems anytime and in any location without physical movements to a library. This is further simplified by publishers’ wide online publication of information materials such as eJournals and eBooks that address the diverse needs of contemporary learners who prefer the learning experience’s convenience; the availability of platforms allows access to EIRs remotely without being at campus (within public IP ranges). This makes access to library resources within the library walls and off-site (outside the institution).⁵⁰ This improves efficiency in service provision by librarians because the library resources can be accessed anywhere and anytime;¹⁵ users’ multiple access to a single resource makes EIRs more popular than print resources held in libraries.¹ Access to one electronic resource by more than one user benefits libraries with limited budgets for procuring enough print resources to equally serve all library users’ information needs;⁴⁹ EIRs make it easy to interact with librarians online. It is also confirmed by other researchers such as.⁵⁰ where it was identified that digital libraries promote quicker user interaction with librarians that promote information sharing both on-site and off-site. University readiness to fund and support EIRs: This sentiment by the respondents was voiced in a previous study by,³⁸ who intimated those institutions with good policies for funding and building ICT infrastructures tend to benefit a lot from digital transformation initiatives such as adopting EIRs in support of research, and teaching and learning. Some of the strengths of EIRs found include; meaningful use of study material; staff, students and librarians’ willingness to learn; multidisciplinary sources of information; EIRs platforms are user-friendly; and EIRs are easy to use and facilitate interactivity.

Some of the weaknesses identified in using EIRs in Ugandan academic libraries include the absence of local content. Studies by^{30,49} noted that most EIRs are not in local languages or have published indigenous research, making some content not fit the local context. This makes their usage and application not prioritised; EIRs depend on internet connectivity for their access, which has been reported to be slow and unreliable. This finding confirms what was reported in a previous study,^{1,2,30} which asserted that electronic resources are published in different places or countries and hosted on servers far from each other. Therefore, accessing such resources requires stable and reliable access to the Internet. Internet connectivity in Uganda is slow, particularly in rural and urban parts of Uganda.⁴⁰ This could be attributed to the low usage of digital initiatives in Higher Education,¹⁶ lack of computer literacy skills and computing devices for accessing the resources and appropriate software coupled with a lack of

commitment among teaching staff to use and encourage their student to use EIR for learning was reported as a limitation in the usage of EIRs in northern Uganda. This finding was reported in similar studies by.^{12,13,26,30,43} Skills and possession of the ICT equipment with the necessary installed software play a critical role in using EIRs in rural institutions where other alternatives are hard to find. Some institutions in Uganda, such as Muni University, instituted policies requesting their newly admitted students to bring their own devices (BYOD) for teaching and learning. However, implementing the policy is ineffective;⁵⁸ some learners do not possess the devices. Relatedly, the negative attitude towards using EIRs also affects the usage of these resources; the multiple login password requirements to access the resources discourage using EIRs by those who might not have forgotten their login passwords. This problem is real at Muni University, where library users must have a username and password for the library catalogue, another for accessing EIRs and accessing the eLearning system, and student registration. Bwalya and Ssebale (2017)¹⁸ noted the challenge and suggested that libraries acquire a system to integrate all university login-related accounts so that users will use one username and password to access all library systems. Some of the identified weaknesses included a lack of computing devices to access the resources, lack of commitment among faculty members to using EIRs, limited competencies of faculty members in using EIRs, the resistance of some lecturers to adopt change and new technology, limited support for faculty members on using EIRs, lack of institutional support, negative attitudes of some faculty members and students towards new technology and reading nonprint resources, and the heavy workload at the workplace for faculty members limiting their time to search, retrieve and evaluate EIRs.

Several opportunities have been identified to increase the usage of EIRs in Ugandan academic libraries, including adopting ODEL in academic institutions due to the COVID-19 pandemic. Studies by^{3,31} believed that COVID-19 brings an opportunity for libraries to effectively promote the use of EIRs as a remedy to reduce physical contact with print materials and with librarians. Such new normal ideas have been innovated and adopted by institutions to provide services to their clients. Muni University developed an ODEL policy to guide and promote online learning. One of the policy objectives is to acquire quality EIRs for supporting research, teaching, and learning at the university; the availability of multidisciplinary journals increases access to various EIRs. Contemporary research focuses on multidisciplinary research where different knowledge domains work together to benefit from the uniqueness of each other, which is a big promotion of the EIRs that Ugandan libraries possess. A study by Darandale (2017)⁴⁹ hinted that major journals promote multidisciplinary research to add value to their research

products and increase their impact factor from knowledge domains. The government of Uganda's internet connectivity expansion programmes offer an excellent opportunity for library users to have cheaper alternative means to access the Internet. Northern Uganda is now connected to the National Backbone Infrastructure Project (NBI/EGI) (NITA-U, 2021). This government internet service will back up what is already provided by the private sector. The Internet bandwidth prices are also reducing yearly due to the competition by the many players due to the liberalised telecommunication sector in Uganda,¹⁶ and the rapid development in ICT has made publishers develop systems that made EIRs access platforms easy to use by simpler search engines accessible by mobile devices of any kind. Some even developed mobile applications that allow downloading their content on mobile devices to be accessed offline. This is beneficial to users of EIRs that have limited access to the Internet.

Threats to the usage of EIRs in Ugandan academic libraries include slow and unreliable internet connectivity, which affects EIR usage in the rural parts of developing countries such as Uganda. As noted by,^{2,4,16,26,38,40,49} access to EIRs requires stable and speedy internet access. Unfortunately, such internet connectivity can hardly be found in rural Uganda. The available Internet is slow and sometimes inaccessible. This is a big stabling block in the usage of EIRs; as such, library users are forced to use the available option, the print library collections.

Unreliable electricity supply is a threat to the access of EIRs. This respondents' view was expressed in the studies,^{15,26,49} which indicated that access to EIRs depends on electricity for powering the devices needed to access and use the resources. A similar study conducted in Zimbabwe² noted that unreliable electricity supply made access points for the EIRs, such as websites and servers, off most of the time, hence limiting the usage of the EIRs; the subscription fees for EIRs keep increasing every year even though the usage statistics in most developing countries continue to remain low. Because of the increases in subscription fees, some libraries are forced to reduce EIRs subscribed to work within the limited budget. However, as²³ noted, a reduction in EIRs databases subscribed reduces the amount of library users' information resources for their academic work and unfriendly intellectual property rights (copyright issues) restrictions. This observation was made by,⁵⁰ who asserted that access to most electronic resources is limited by copyright law and regulations. Some of these laws restrict copying text and printing limited pages of a document, thus affecting the usage of EIRs. Some of these unfavourable regulations are witnessed by eBooks database providers where download/print of book pages are changed anytime by publishers/aggregators without notifying libraries, ever-increasing cyber-attacks and other online security issues, e.g., theft of personal data. Another earlier study also

reported this finding⁵⁰. They opined that there are safety questions about network securities and using personal data collected by EIRs platforms and publishers. Likewise, some library resources are not easily accessible because the websites where the EIRs links are hosted are not well organised, and others are often off when needed.²

Dwindling donor funds towards payments of EIRs for library consortiums like CUUL has affected their capacity to subscribe to enough EIRs for their library users. For example, the CUUL member libraries used to benefit from resources such as the Institute of Electrical and Electronics Engineers (IEEE) eLibrary, Sage, American Society of Civil Engineering, Wiley, Project Muse, Cambridge University Press, and Henry Stewart Talks that Makerere University subscribed through their donor Sweden's Government Agency for Development Cooperation (SIDA) project;⁵⁶ limited publicity for the EIRs as one of the weaknesses affecting the usage of EIRs. This was noted in the studies by^{31,38} Mbambo-That (2020)³¹ suggested that librarians consider adopting appropriate marketing and promotion options for the library EIRs and creating easy access points for EIRs on library catalogues, websites, and links shared on online platforms such as social media. Difficulty in searching and accessing electronic resources from publishers' portals. This finding is logical with the work,^{2,23} where they found that some EIR platforms are difficult to search and access a resource to download, coupled with the platforms' poor design interfaces, especially those without a search engine. Other threats identified included unfavourable changes in the user agreement terms by publishers and aggregators.

6. Conclusions

Many universities in Uganda adopted the EIRs before and during COVID-19 to ease access to library information services and resources. No University in northern Uganda has ever conducted a comprehensive SWOT analysis on EIR usage in academic libraries. This study, therefore, will help universities and other institutions that wish to implement EIR. The analysis of the results confirms that most respondents agreed that librarians expose teaching staff and final-year students to all the library EIRs. It also confirmed that it is essential for teaching staff and final-year students to access EIRs. The study identified knowledge and skills, the relevance of EIRs, awareness and adaptation, availability of technological infrastructure and resources, institutional policies, perceived ease of use and access, perceived quality content, and previous experience as the drivers for the usage of EIRs in academic libraries in Uganda by teaching staff and final year students. Similarly, the strengths, weaknesses, opportunities, and threats to using EIRs were identified. This research, thus, recommends that for a fruitful adoption and implementation of EIRs in Ugandan libraries,

1. The government and universities should provide a reliable and alternative power supply, such as solar and power backups, to enable easy EIR access.
2. The government and universities should provide reliable and fast internet connectivity for easy EIR access. Besides, the internet bandwidth for academic libraries should be increased
3. The universities should train, motivate, and support their library department, librarians, teaching staff, and students to ensure maximum use of EIRs.
4. Academic libraries must purchase more computing devices like computers, laptops, and Kindle to access the EIRs.
5. The government and academic libraries should adequately account for and use donor funds for EIR payments.
6. EIR publishers should improve EIR's platform design interfaces to search for information and access available electronic resources easily.

7. Finally, intellectual property rights should be friendly to the universities

The findings of this study generated ideas that the universities, libraries, and library consortia can use in decision-making regarding choices of EIRs selection and their procurement to realise value for money.

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9. Conflict of Interest

None.

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