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Sri Lanka

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2023 International Conference of University Librarians Association

"Transforming Academic Libraries for a Sustainable Future"

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International Conferences Held by the University Librarians Association of Sri Lanka

1. **"E-information for Teaching, Research and Learning: Options for a University Consortia"**
   1st International Conference of University Librarians Association (ULA) of Sri Lanka, 27th and 28th May 2005 at Hotel Galadari, Colombo.

2. **"Information Best of Two Worlds"**
   2nd International Conference of University Librarians Association (ULA) of Sri Lanka, 23rd and 24th May 2006 at Hotel Galadari, Colombo.

3. **"Libraries in Higher Education: Partners in K4D?"**
   3rd International Conference of University Librarians Association (ULA) of Sri Lanka, 8th and 9th June 2007 at Hotel Galadari, Colombo.

4. **"Libraries as Centres of Excellence"**
   4th International Conference of University Librarians Association (ULA) of Sri Lanka, 2nd and 3rd July 2008 at Hotel Galadari, Colombo.

5. **"Research for Impact (R4I)"**
   5th International Conference of University Librarians Association (ULA) of Sri Lanka, 2nd July 2009 at Hotel Galadari, Colombo.

6. **"University Librarianship: An Academic Challenge and an Opportunity"**
   6th International Conference of University Librarians Association (ULA) of Sri Lanka, ICULA 2010, 14th and 15th July 2010 at Ceylon Continental Hotel, Colombo.

7. **"Contribution of the Academic Librarians Towards a Knowledge Society"**
   7th International Conference of University Librarians Association (ULA) of Sri Lanka, ICULA 2011, 16th and 17th August 2011 at Hotel Galadari, Colombo.

8. **"Libraries as Partners of Knowledge Sustainability"**
   8th International Conference of University Librarians Association (ULA) of Sri Lanka, ICULA 2016, 7th and 8th March 2016 at University of Jaffna. Jaffna.

9. **"Academic Libraries as Research Saturation Centers: Reshaping the Libraries for Tomorrow"**
   9th International Conference of University Librarians Association (ULA) of Sri Lanka, ICULA 2018, 20th and 21st September 2018 at Golden Rose Hotel, Boralesgamuwa.

10. **"Reinvigorating Libraries: Smart Responsiveness for Sustainability"**
10th International Conference of University Librarians Association (ULA) of Sri Lanka, ICULA 2019, 18th September 2019 at Mount Lavinia Hotel, Colombo.

11. **"Scholarly Publishing & Open Access for the Enhancement of Research Visibility"**
11th International Conference of University Librarians Association (ULA) of Sri Lanka, ICULA 2021, 22nd September 2021, Virtual Conference.

12. **"Connecting People through Transformative Libraries"**
12th International Conference of University Librarians Association (ULA) of Sri Lanka, ICULA 2022, 27th October 2012 at Hotel Miraj, Colombo.

CONGRATULATORY MESSAGE FROM THE CHIEF GUEST

H. E. MIYON LEE

Hon. Ambassador of the Republic of Korea to Sri Lanka

It is with contentment that I extend my wishes to the University Librarians Association of Sri Lanka for your success in organizing the International Conference of University Librarians Association of Sri Lanka (ICULA 2023) for the thirteenth year this October. I appreciate the commitment the members of the association have rendered across the academia for years and the engagements the association have steered to share knowledge among counterparts. The association has chosen a theme that accommodates a timely discourse that requires much concern in a rapidly moving world with innovations in science and technology. I hope this effort marks another step forward in contributing to society as the association represents members from different disciplines of study.

I would convey best wishes and success in all your future endeavours.

MESSAGE FROM THE CONFERENCE CHAIR

DR. W. M. T. D. RANASINGHE

President, University Librarians Association

Senior Assistant Librarian, University of Kelaniya

I am deeply honoured to serve as the Conference Chair for the 13th International Conference of the University Librarians Association (ICULA 2023), organized by the University Librarians Association of Sri Lanka.

The University Librarians Association of Sri Lanka (ULA), a distinguished professional organization representing the interests of academic librarians in Sri Lanka for over four decades, remains steadfast in its commitment to elevate the professional status of its members. ICULA stands as one of the most prominent academic events in the field of library and information science (LIS) within Sri Lanka, offering an annual platform for scholars and LIS professionals to share their insights, knowledge, and opinions

ICULA 2023 promises a unique experience for both presenters and participants as we convene in post-pandemic Sri Lanka. This year's conference theme, "Transforming Academic Libraries for a Sustainable Future," resonates with the United Nations' Sustainable Development Goals for 2030. We are proud to feature thirteen (13) full papers and extended abstracts selected for presentation, covering a wide array of LIS topics, thoughtfully distributed across three (03) technical sessions. Notably, these contributions reflect various aspects related to the central theme of the conference.

I extend my heartfelt gratitude to our esteemed Chief Guest and Keynote Speaker for graciously accepting our invitation to enrich this event with their invaluable insights. My thanks also go out to our dedicated Conference Advisors for their unwavering guidance and support, instrumental in bringing this event to fruition. Equally, I extend my sincere appreciation to all the presenters and co-authors who have generously contributed their research papers to ICULA 2023.

I would like to take this moment to express my gratitude to our diligent panel of reviewers, the dedicated members of the editorial committee, our exceptional session chairs, and our diligent rapporteurs, all of whom have made indispensable contributions to this conference's success.

Lastly, I applaud the collaborative efforts of the ULA Executive Committee members and ICULA 2023 Organizing Committee members, whose tireless teamwork has transformed this event from a vision into reality.

As we commence ICULA 2023, I extend my best wishes to all presenters and participants, hoping for a fruitful and unforgettable experience.

MESSAGE FROM THE CONFERENCE ADVISOR

DR. W. J. JEYARAJ

Conference Advisor, ICULA 2023

Librarian, Eastern University, Sri Lanka

I am delighted to extend my heartfelt congratulations and best wishes to all of you for your valuable contributions as we participate in the phenomenal research conference of the University Librarians Association of Sri Lanka. The collective effort and enthusiasm dedicated to organizing and participating in this event are truly remarkable.

The journey leading up to this conference has been filled with meticulous planning, extensive preparation and an unwavering commitment to fostering collaboration and knowledge sharing. The insightful discussions, innovative presentations and enriching experiences that facilitate knowledge exchange and enhance our capacity to explore are the achievements of this conference. The diverse range of expertise and perspectives that converge at this conference promises to create a dynamic and engaging environment.

I really admire and appreciate the organizing committee, keynote speakers, presenters, reviewers and volunteers for their tireless efforts in making this conference a reality. Your dedication to excellence and your passion for advancing the boundaries of knowledge in 'Transforming Academic Libraries for a Sustainable Future' are truly commendable. I have no iota of doubt that the impact of the research will resonate far and wide, shaping the future of our academic landscape.

In anticipation of the transformative discussions and impactful relationships that lie ahead, I offer my heartfelt congratulations to all. May this conference serve as a source of inspiration and exemplify the sharing of knowledge and collective growth.

MESSAGE FROM CONFERENCE SECRETARIES

DR. (MRS.) D. N. T. GUNAWARDHANA

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MR. S. SANTHAROOBAN

Co-Secretary, ICULA 2023

Senior Assistant Librarian

Eastern University, Sri Lanka

As the secretaries for the 13th International Conference of University Librarians Association (ICULA 2023), it is our privilege to pen a message to the proceedings of the conference with the theme of "Transforming Academic Libraries for a Sustainable Future". We hope that this conference provides an invaluable platform for scholars, practitioners, and researchers in the field of Library and Information Science (LIS) to come together and explore the evolving landscape of academic libraries.

The era where we are living is ever evolving with more and more technological advancement. The libraries are transitioning from manual to automated, analog to digital which reduces the need for humans to provide information to users. Technologies like Artificial Intelligence (AI), Machine Learning (ML) and Natural Language Processing (NLP) have already started to exert their influence in the field of Library and Information Science. These cutting-edge technologies have reshaped the way libraries operate and provide services. AI-driven recommendation systems, machine learning algorithms for collection management and NLP-powered information retrieval have become indispensable tools in the librarian's toolkit, enabling sophisticated and personalized user services. At this juncture, it is the collective responsibility of university LIS professionals to redefine the role of academic librarians and libraries for a sustainable future.

It is our belief that this conference will be a beacon for scholars to share their research, insights and experiences regarding the integration technologies in Library and Information Science.

The discussions and presentations will enrich our collective understanding of how these technologies can be harnessed to create smarter and sustainable libraries.

The conference proceedings stand as a testament to the collective wisdom and expertise of our community. As we move forward, let us continue to collaborate, innovate and explore new horizons in the field of Library and Information Science. Your passion and dedication inspire us and we are confident that our shared efforts will lead to transformative changes in the academic library landscape.

We also take this opportunity to thank Dr. Tharanga Ranasinge, President, ULA for his visionary leadership as a chairman of this conference and all the organizing committee members for their tireless support to make this event a success. We are very much grateful to our conference advisers Dr. C. C. Jayasundara and Dr. W. J. Jeyaraj, for their valuable contribution and direction. We also wish to express our deep appreciation to Mrs. Thushari Seneviratne, Editor-in-Chief, the dedicated editorial team and our esteemed reviewers. Your meticulous efforts, expertise and commitment have been instrumental in curating the conference proceedings. Your insightful feedback and guidance have ensured the high quality and relevance of the research papers included in the proceedings.

We wish to congratulate all the authors and presenters who are going to publish their innovative ideas at this conference.

MESSAGE FROM THE EDITOR-IN-CHIEF

MRS. THUSHARI SENEVIRATNE

Editor-in-Chief, ICULA 2023

Senior Assistant Librarian

University of Moratuwa

I am delighted to welcome you to the proceedings of the 13th International Conference of the University Librarians Association of Sri Lanka (ICULA 2023). Our focus this year is on 'Transforming Academic Libraries for a Sustainable Future.' As the Editor-in-Chief, I am honoured to introduce a collection of research articles that represent our joint efforts to explore the connection between academic libraries and sustainability.

Sustainability, once just an environmental concern, now spans various areas such as the environment, economics, society and culture. In the academic world, achieving sustainability involves a holistic approach that involves libraries as essential parts of the academic system. This conference aims to shed light on how academic libraries contribute to sustainability through their physical spaces and services, collections and educational missions.

The research articles selected cover different aspects of this important topic, offering diverse viewpoints, creative solutions and insightful ideas ranging from cataloguing of historical data on Ola-leaf and automation of stock verification processes to the transformative power of AI, open access and the vital roles of library liaison services and user education, all while addressing contemporary issues such as research visibility, digital literacy, distance learning and considerations in freedom of expression and censorship.

These contributions reflect the collective knowledge and dedication of scholars who understand the significant role that academic libraries play in making institutions and society more sustainable. I would like to express my gratitude to all the authors, reviewers and organizers who have made this conference a success. I wish to extend my sincere appreciation to the dedicated editorial committee members for their invaluable contributions and unwavering commitment to excellence in the publication process and to Mrs. H. E. P. Mayuri for the elegant cover design.

I hope that the knowledge shared in ICULA 2023 inspires long-lasting sustainability in our institutions and communities.

KEYNOTE SPEECH

Digital Transformation of Academic Libraries for a Sustainable Future

PROF. K. P. HEWAGAMAGE

Senior Professor in Computer Science

University of Colombo School of Computing (UCSC)

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Academic libraries have played a vital role in the advancement of knowledge in higher education institutes and it is a part of the foundation in the universities. However, academic libraries are facing many challenges during the last two decades and an effective transformation should be implemented for their future sustainability. Two decades ago, computerization demanded that academic libraries provide a digital library service as a compulsory requirement. Hence, the concept of "digital libraries" became a popular objective to achieve almost 10 years ago. However, the present challenges demand a complete transformation of academic libraries to satisfy the requirements of the Industrial Revolution 4.0 (IR 4.0). This is a harder challenge than the digital library service and it is a requirement to survive within universities as well as the sustainability of the higher education institutes.

The root causes of challenges are linked to the context or environment in which the libraries provide their services. The digital revolution two decades ago due to the Industrial Revolution 3.0 forced academic libraries to accept the digital materials equivalent to the traditional physical materials of the print version. Hence, libraries began to offer digital resources such as e-books, e-journals and e-collections (online databases/repositories) in addition to their traditional print collections. This initiative of digitalization of libraries established a significant shift in the way academic libraries functioned. At the same time, the integration of digitization and access through the Internet (online) has led to a significant increase in the volume of information resources available to libraries and their patrons.

The digital transformation (Dx) mainly contains three stages, namely, digitization, digitalization and digital transition stage. Converting printed library materials to digital format or creating digital library materials belongs to the first stage, digitization, of Dx. The development of library information systems and digital library services are considered activities in the second stage, the digitalization of Dx. There were many open-source or proprietary systems have been adopted by academic libraries to establish the new environment. The third stage, digital transition is based on the new business model based on the services of digitization and digitalization. For example, library users started accessing the library materials without physically visiting the library and many services were made available for remote access

through the Internet. The success of these three stages of digital transformation during IR 3.0 may vary from one library to another, but all libraries still face many challenges to obtain the maximum benefit of Dx.

We are now at the end of IR 3.0 and started experiencing the IR 4.0 services which are characterized by the integration of advanced technologies such as artificial intelligence, machine learning, the Internet of Things (IoT) and data science. Interestingly, IR 4.0 will facilitate the libraries to provide the content on demand which will be interactive and explorative using virtual reality or mixed reality simulations. Hence, academic libraries will become a partner of knowledge exploration by their patrons.

The evolution of IR 4.0 is based on the IR 3.0. The academic libraries that have not adopted the digital transformation due to IR 3.0 will find it very difficult to expand their services based on IR 4.0. For example, a traditional library which still consists of printed materials without at least a library information system, will find more difficulties or challenges due to the demand of IR 4.0. Overall, both IR 3.0 and IR 4.0 have a significant impact on academic libraries by changing the way they operate and provide services to their members. However, the challenges due to IR 4.0 are unprecedented compared to that of IR 3.0 but it is a requirement of future sustainability.

The users of the academic library which includes students, teachers and researchers, have a positive perception of the library as the knowledge repository of the University to explore the subject matters with respect to different disciplines. Hence, the library needs to organize its collections in line with the different disciplines of faculties in the university. It is important to maintain the updated literature concerning disciplines/sub-disciplines to maintain the trust of its users. Generally, there are two types of users, one wants to expand the knowledge based on the courses of studies and others want to expand the knowledge to carry out the research studies. For example, textbooks serve the purpose of expanding knowledge, and journals/proceedings facilitate to acquisition of the latest development in the knowledge. The biggest challenge for all users of academic libraries is to identify the correct set of materials to satisfy their requirements. In the past, users had to spend considerable time and effort to locate even a small piece of information and sometimes rely on the library staff for assistance. Later, ICT-based systems and services brought a paradigm shift when computers took care of housekeeping activities including searching facilities to locate the information needs of library users more effectively.

On the other hand, the biggest challenge of academic libraries is to attract users to access the content of the library. Before the penetration of the Internet in the universities, the users didn't have an option other than the library to explore knowledge. Later, academic libraries faced a significant setback due to online facilities, when library usage decreased. This forces academic libraries to follow the digital transformation and expand their collection using Electronic Information Resources (EIRs) such as audio and video materials on demand, e-books, e-journals and special access to online resources that can be subscribed by the libraries. Hence, the Internet has revolutionized the way information is accessed and consumed by academic patrons by transferring them into the academic hub of knowledge and innovation.

In the present context, library users prefer to access on demand, at any time and remotely. The physical visit to the library requires if there are some restrictions to access some materials or if they prefer the environment when accessing the materials. For example, high bandwidth, a calm environment and modern technologies such as AR/VR facilities. Hence, academic libraries are important nodes of the university network to access the high-speed Internet and should have modern technology devices.

There were many predictions and demonstrations about the role of Artificial Intelligence in the future during the last two decades. Among them, generative AI is an interesting application that was developed to create content using existing content. Generative AI works by using a machine learning model on top of a large language model (LLM) to generate content in response to queries given by the user. It also has the ability to continue a conversation to generate responses like humans. This process could be used to generate not only text but also images, videos, instruction sets, books, essays, computer code, etc. The validity and accuracy of the content may vary depending on knowledge sources and algorithms used in the process. The general public was able to experiment and experience the power of generative AI when ChaptGPT was introduced at the beginning of 2023. Sometimes, ChatGPT could generate content in a few seconds, which requires many months for a human user to generate. Hence, there is a significant impact on library services due to generative AI-based applications. For example, the library could provide a chatbot service to users to find answers to questions based on the selected materials in the library.

IR 4.0 introduces the fourth layer in digital transformation using the latest advances in technologies including Artificial Intelligence. This layer could be named as the data-driven transformation layer to provide smart and intelligence services to library users. The data-driven layer could analyze all usage patterns of library materials by its patrons and provide customized services based on different requirements. It will be more than searching the content of digital materials based on different queries and filtering the relevant materials as requested by the user. For example, the system could generate on-demand answers for questions considering several academic materials in the library. This machine-generated content will appear as the new information layer on top of digital materials in the library.

An intelligent chatbot could keep track of each user and can provide more effective guidance and support for a user to learn the relevant subject matter than a human user. This personalized service will be a prerequisite requirement of library services to maintain the relationship between users and libraries. Interestingly, an intelligent chatbot could guide a student to learn the subject content similar to a teaching assistant who will point out the relevant materials as well as interact with the students using questions and answers to evaluate their performance.

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ENHANCING ACADEMIC EXCELLENCE: A CASE STUDY OF SUBJECT LIAISON LIBRARIANS SERVICE IN THE FACULTY OF COMMERCE AND MANAGEMENT STUDIES AT THE UNIVERSITY OF KELANIYA

R. A. A. S. Ranaweera[1]

Abstract

This paper addresses the significance of the newly introduced Subject Liaison Librarian Service (SLLS) at the Library, University of Kelaniya. By adopting the case study method, the article describes the experience of the subject liaison librarian assigned to work at the Faculty of Commerce and Management Studies at the University of Kelaniya. The main objective of this article is to investigate the role played by the subject liaison librarian and the activities offered to enhance the teaching, learning and research excellence of the Faculty of Commerce and Management Studies, University of Kelaniya. The primary data for this study was collected through the monthly progress report prepared by the subject liaison librarian of the Faculty of Commerce and Management Studies for the Library Committee. The collected data were tabled and presented descriptively. This study concludes that the subject liaison librarian service played an active role in fostering the teaching, learning and research excellence of the Faculty of Commerce and Management Studies. During the pandemic subject librarian successfully managed to provide continuous support to carry out teaching and learning activities by using online platforms. The present study recommends that by adopting new programme such as subject liaison service, the university libraries could upgrade their current service standards to the international level.

Keywords: *Subject liaison librarians, Faculty-library collaboration, Subject librarian, Academic librarianship, University librarian*

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Introduction

The liaison librarian role has been in use within academic libraries for an extended period, often under different titles. These librarians have been alternatively known as "subject specialists", "faculty librarians," liaison librarians," embedded librarians" or "subject librarians" depending on the job task they performed (Church-Duran, 2017; Alabi, 2018; Hübner & Wagner, 2023). Simply, a subject librarian, also known as a liaison librarian or faculty librarian is a specialized librarian who focuses on a particular subject or academic department within a university or research institution. Their primary role is providing support and resources to the faculty, students and researchers in that subject area.

Over the past few decades, ample literature has been written about librarianship under different topics. This literature widely covered the subject aspects of the emerging role of subject librarian (Church-Duran, 2017; Eddy & Solomon, 2017), a collaboration between the faculty and the library (Díaz& Mandernach, 2017; Pautz & Gauder, 2017; Alabi, 2018; Peterson & Finnie, 2018; Klain-Gabbay& Shoham, 2019; Hübner & Wagner, 2023), user perception of faculty library services (Klain-Gabbay& Shoham, 2017; Fagan, et al., 2020.) etc.

The academic librarianship is constantly changing with growing demands in the higher education sector. The technological development also accelerated this process. With these changes, the conventional role of an academic librarian is not enough to cater for the information needs of the tech-savvy users in universities. Therefore, academic librarian always plays an evolving role to be on par with these new developments and changes in the higher education sector. In the local context, the faculty librarians attached to main university libraries render a library service to the respective facilities. There is no doubt that these activities represented the role of a liaison librarian.

In the local context, Wijayasundara (2008) introduced a model for faculty-library collaboration based on a literature survey. Seneviratne (2009) examined the partnership between the library and the Faculty of Engineering in teaching information literacy to first-year newcomers to the University of Moratuwa. In addition to these studies, Hindagolla (2012) studied the effectiveness of user education programmes of the library offered to the undergraduates of the Faculty of Arts, University of Peradeniya. These studies primarily focused on the library activities conducted to fulfil the information needs of the faculties during special occasions such as user education programmes and orientation to the first-year students.

However, according to the available literature on the faculty library activities and experience, no study has been found on the evolving role of academic librarianship. During the COVID-19 pandemic, the academic librarian's involvement in fulfilling user needs and demands is remarkable with online services and 'work from home' phenomena. Also, there is no study carried out on the policy-level provision of the subject liaison librarianship in the universities in Sri Lanka. In this context, the subject liaison librarian programme in the Library, University of Kelaniya is significant as it was inaugurated with the approval of the University's key policy provision authorities: the Library Committee and the University's Senate. Launching the Subject Liaison Library Service (SLLS) at the Library, University of Kelaniya marks a milestone in the domain of university library in Sri Lanka as this was the first subject liaison programme approved by the University with the policy provision.

Therefore, this research was carried out to fill the gap in the literature by exploring the main requirement of subject liaison library service, the evolving role of academic librarianship, addressing library policy level provision on establishing the subject liaison library service at the Library, University of Kelaniya by narrating the experience of the subject liaison librarian attached to the Faculty of Commerce and Management Studies (FCMS) at the University of Kelaniya from 2020 to 2022. This study seeks answers to the following research questions:

1. What is the main idea of establishing a subject liaison librarians service at the library, University of Kelaniya?
2. Why subject liaison librarians service is important to the Faculty of Commerce and Management Studies?
3. What are the services offered by the subject liaison librarians service for the Faculty of Commerce and Management Studies?
4. How was the subject liaison librarian involved in fulfilling the information needs of the faculty during COVID-19?

Methodology

The subject liaison library service of the University of Kelaniya rendered its service to all the faculties in the University. However, this study is limited to the Faculty of Commerce and Management Studies and adopts the case study method. The population of the study comprised academic staff members, undergraduates and postgraduate students of the faculty. The primary data were collected from the monthly progress report prepared by the Faculty of

Commerce and Management Studies subject liaison librarian for 2019-2022. The data analysis was done according to the subheadings based on the formulated research questions of the study.

Results and Discussion

Subject Liaison Librarians Service at the Library, University of Kelaniya

While marking a significant milestone in the library, the subject liaison library service of the Main Library, University of Kelaniya, was initiated in 2019. This progamme was commenced as part of the library strategic plan 2019-2020 introduced by the Librarian of the University, to the 2018/07 Library Committee on 13th November 2018 (The Library, University of Kelaniya, 2018). According to the strategic plan under the subject liaison library service, there were 18 key functions outlined (The Library, University of Kelaniya, 2018). The main objective of establishing this service is to assist staff and students in successfully pursuing academic endeavours while maintaining a close collaboration with the faculties of the university. A dedicated team of five Senior Assistant Librarians were appointed for the Faculties of Computing and Technology, Commerce and Management Studies, Science, Social Sciences and Humanities to serve as subject liaison librarians. They were given a letter of appointment with a job description related to subject liaison activities on 25th January, 2019. In addition to the faculties mentioned above in the University's Dalugama premises, the Faculty of Medicine located in Ragama also gave the subject liaison library service through the Senior Assistant Librarian attached to the Faculty of Medicine. Accordingly, the overall tasks related to library operations related to the Faculty of Commerce and Management Studies including collection development, user education, teaching, research and learning support, representing the library at the faculty board, user quiries, maintaining digital collection etc. are handled by the subject liaison librarian of the FCMS. The Head of the subject liaison librarians service is requested to present the monthly progress of the subject liaison activities carried out for the Faculties to the Library Committee as an agenda item.

Importance of the Subject Liaison Library Service to the Faculty of Commerce and Management Studies

The Faculty of Commerce and Management is considered as one of the leading faculties in the national university sector in the commerce and management subject stream. The Faculty of Commerce and Management Studies, University of Kelaniya was initiated as

a unit under the Department of Economics, Faculty of Social Sciences in 1976 and received full faculty status in 1995. There are five departments in the faculty, including the Department of Accountancy, the Department of Commerce and Financial Studies, the Department of Human Resource Management, the Department of Marketing and the Department of Finance. Faculty offers 10 undergraduate degree programmes, 1 Doctor of Business Administration programme, 5 Master's Degree programmes, 5 Diploma programmes, 5 Higher Diploma programmes and 2 Postgraduate Diploma programmes. Currently, the faculty comprises 127 dedicated academic staff members, 2,376 undergraduates and 585 postgraduate enrollments.

As clearly defined in the vision of the faculty, it is always intended to produce intelligent, innovative and creative professionals to work with the commerce and management industry in Sri Lanka. Therefore, fulfilling the dynamic information needs of the faculty is essential. The subject liaison library service of the Faculty of Commerce and Management Studies provided the correct answer, as this service was meticulously designed to enhance the quality of teaching, research and learning landscape within the university community.

The role played by the subject liaison librarian as an invitee to the Faculty Board is significant. The faculty board meeting is held monthly and 'Library Matters' is an agenda item at the meeting. During the faculty board meeting, the liaison librarian delivers updates on library programmes and services specially tailored to the needs of the staff and undergraduates of the Faculty of Commerce and Management Studies. Participation in the faculty board meetings facilitates close communication between the liaison librarian and the faculty. Awareness of faculty-related activities and developments is a valuable foundation for planning and executing library liaison-related initiatives for the faculty. The direct interaction between the liaison librarian and faculty members during these board meetings provides ample opportunities to share and discuss library policies, programs, and services that cater to the Faculty of Commerce and Management Studies requirements. These faculty board meetings also serve as a platform for promoting library resources and services to faculty members, fostering strong networking ties between the faculty and the library.

The subject liaison librarian service strengthens the collaboration between the faculty and the library. The faculty-library partnership is highlighted on several occasions. During the process of obtaining ISO 9001:2015 for the library, the experience, expertise and documents shared by the staff members of the Department of Finance with the library provide a fine example of faculty-library collaboration.

Services Offered by the Faculty through Subject Liaison Library Service

The subject liaison activities offered to the Faculty of Commerce and Management Studies focused on enhancing user education and supporting the faculty's academic, research and learning culture. By supporting these two avenues, undergraduates and staff have benefited differently. Enhancing user education is considered one of the main tasks of the subject liaison librarian of the faculty. Library user education programmes offer librarians a valuable platform to engage with faculty and students, raising awareness of library resources.

Table 1 showcases the activities carried out by the subject librarian of the faculty to enhance the user education and research productivity of the undergraduates and staff members of the Faculty of Commerce and Management Studies.

Table 1: Subject Liaison Library Services

Service	2020	2021	2022
Library orientation programmes	01	01	01
Conducting 'Guided Library Tours'	*	745	695
Undergraduate and postgraduate lectures conducted	03	05	06
User guides prepared (Videos, PowerPoint Presentations)	02	03	05
Coordination of creating Grammarly accounts for the faculty members	-	-	400
Handling plagiarism-checking requests	-	333	-
Facilitating to obtain ISSN/ISBN for faculty publications	-	10	03
Document delivery service	05	39	18
Individual consultation sessions and literature searches	02	03	06
Create a password for accessing Pearson E-Library for post graduate students	02	99	-

* Due to COVID-19 this was not conducted

Since 2019, the main lecture on 'Introduction to the Library' at the orientation programme for first-year undergraduates was conducted by the subject liaison librarian of the Faculty of Commerce and Management Studies. Before establishing the subject liaison library service, the librarian conducted the library orientation lecture.

After addressing the main orientation programme at the faculty, the first-year students are required to participate in the guided library tour. The primary purpose of this guided library tour is to empower first-year undergraduates with skills to access the library for their academic journey at the university for all four years. During this guided library tour, first-year students of the Faculty of Commerce and Management Studies were able to get an ample understanding of the library in areas such as layout, sections, service offers, catalogue searching, check in–check out procedures, access to both print and electronic resources, demonstrations on e-repositories maintained by the library, rules and procedures of the Library, University of Kelaniya. This programme mainly helps to minimize the 'library fear' among first-year students (Punchihewa, et al., 2018).

Due to the pandemic, the guided tour could not be undertaken in 2020. However, for the years 2021 and 2022, this programme was successfully conducted by the subject liaison librarian attached to the Faculty of Commerce and Management Studies with the collaboration of the subject liaison library service and reader services section of the Library, University of Kelaniya. Table 1 depicts the higher participation of undergraduates in this programme.

Improving the user's ability to utilize library resources effectively was another key responsibility of the subject liaison library service. Therefore, the subject liaison librarian conducts lectures, workshops, seminars and webinars on enhancing the information literacy of the undergraduate and teaching staff of the faculty regularly. These workshops related to information literacy empower students and faculty to effectively search for information for their research and critically evaluate information sources. These training sessions on information literacy indeed change students' research habits, the quality of their assignments and confidence in using library resources. The subject liaison librarian conducts lectures on ‘Information Searching Techniques and Electronic Database Searching’ and ‘Reference Management’ for the final year undergraduates as part of the research methodology module in their curriculum.

Furthermore, the subject liaison librarian serves as a valuable resource person in the postgraduate education of the faculty. This contribution encompasses participation in various postgraduate degree programs, including the Doctor of Business Administration, Master of Business Administration (MBA) and Master of Business Degree Programs. The subject liaison librarian's engagement spans both undergraduate and postgraduate degree programs, encompassing offerings from the Faculty of Commerce and Management Studies and the Faculty of Graduate Studies. The multifaceted involvement of the subject liaison librarian in

teaching, research and postgraduate education underscores their dynamic role in nurturing academic and research excellence within the Faculty of Commerce and Management Studies. The subject liaison librarian is also responsible for generating passwords to access Pearson's E-Library upon request, as facilitated by the library. Pearson's E-Library contains nine textbooks related to postgraduate studies and these e-books were purchased through the MBA funds of the faculty.

By preparing informative videos and interactive PowerPoint presentations, library liaisons of the faculty could be able to explain topics such as introduction to the library, electronic database searching, reference management, complex search processes, citation styles related to faculty and how to use past papers, etc. These guides often provide step-by-step instructions, highlighting key features and best practices for using library resources. The user guide and subject gateways were uploaded to the web page of the subject liaison librarian of Faculty and Commerce and Management studies on the main website of the Library, University of Kelaniya.

The library offers multifaceted activities through the subject liaison librarian service to enhance the academic and research productivity of the Faculty of Commerce and Management Studies from both staff and undergraduate perspectives.

Librarians provide essential support through personalized research consultations. These are one-on-one meetings or consultations between subject librarians and students or staff members. During these sessions, librarians offer guidance, answer questions and provide support tailored to the individual's research needs. These personalized research consultations empower individuals with the skills and knowledge needed for effective research and foster a collaborative partnership between librarians and researchers. These consultations act as catalysts for academic growth and achievement.

To enhance students' and staff's writing and communication skills, the University of Kelaniya subscribes to the 'Grammarly writing assistant tool'. By coordinating the creation of Grammarly accounts for faculty members, the subject liaison librarian has taken steps to empower both lecturers and students to excel in their writing and research endeavours. By the end of 2022, a total number of 400 accounts were created by the Grammarly administrator of the library for the Faculty of Commerce and Management Studies, covering academic staff members, final-year undergraduates, postgraduate students and administrative staff.

Plagiarism checking requests of the faculty are handled by the subject librarian. Currently, University of Kelaniya has subscribed ‘Urkund' plagiarism software. When a plagiarism-checking request is received, the subject liaison librarian assists students and

faculty members by running their documents through the software, checking for potential plagiarism issues and providing guidance on proper citation and referencing. This ensures the integrity of academic work and promotes scholarly practices within the institution. For the year 2021, the subject liaison librarian coordinated to set up 333 for both academic staff and final-year undergraduates of the faculty.

Coordination of obtaining the International Standard Book Number (ISBN) /International Standard Serial Number (ISSN) for the publications of the staff members or the faculty is another outstanding activity of the subject liaison librarian of a faculty at the University of Kelaniya. According to the new guidelines provided by the National Library of Sri Lanka, obtaining ISSN/ISSN no. for the University publication is coordinated through the library of a particular University. Therefore, for the Faculty of Commerce and Management Studies, the subject liaison librarian coordinated with the officer in charge of the service to obtain ISBN/ISSN and managed to get 10 ISBNs in the year 2021.

Document delivery service is another popular service handled by the subject liaison librarian of the faculty. Providing the research articles needed by the users of the faculty enables the subject librarian to directly engage in supporting the teaching and research culture of the faculty.

In addition to the above services, the subject liaison librarian is directly responsible for the collection development, including collecting wish lists from faculty members, budget management, ordering library materials, processing, weeding out and stock verification related to the faculty. Coordination of 'English Language Zone' is another activity done by the liaison librarian and the main idea of this project is to improve the English language skills of the students of the faculty.

The Interactive and Collaborative Learning Unit of the library has provided 3 smart classrooms for the undergraduates to interact with modern developments in information and communication technology for their learning. This facility encourages undergraduates to engage in e-learning practices and students can use these smart classrooms with a prior reservation. Compared to undergraduates in other faculties, the students of the FCMS demonstrate a higher utilization of these smart classrooms in the library. Undergraduates mainly utilize these smart classrooms for practicing their presentations and discussing group assignments.

Subject Liaison Librarian Activities During the COVID-19

The COVID-19 pandemic brought numerous challenges to the world, especially in the higher education sector. Temporary closure and social distance were affected by libraries. Though the university was physically closed, the teaching and learning activities were continued. Along with the COVID-19 pandemic, the conventional method of teaching and learning within the university system suddenly changed to online mode. During the pandemic, both students and staff could not visit the library physically. The Faculty of Commerce and Management Studies adopted the new online teaching method successfully within the university and took the pioneering steps at the University of Kelaniya by offering lectures online via Zoom online communication platform.

In response to the extraordinary circumstances presented by the pandemic, the subject liaison library service in the Library, University of Kelaniya twisted dynamically by offering most of the services and operations to an online platform. The transformation from physical to online was quite a challenge with the concept of 'working from home.' However, with available resources and technology, the subject librarians successfully fulfilled the information needs of undergraduates and faculty members during the pandemic.

Table 2 shows the main services offered by the subject liaison library service to carry out the faculty's teaching, learning and research circles during the pandemic. Uploading the online library resources related to course contents of all five departments for the undergraduate level was considered a main task performed by the subject liaison librarian attached to the faculty during the pandemic. For the year 2021, there were 718 online resources uploaded to the learning management system and through this process library was able to facilitate continuous teaching and learning activities of the Faculty of Commerce and Management Studies without preventing users from physically coming to the library.

Table 2: Subject Liaison Library Service During the COVID-19 Pandemic

Service	2020	2021	2022
Upload library resources to the Learning Management System (LMS)	718	-	-
User inquiries answered (via instant messaging, email and phone)	27	118	40
Past papers uploaded to the Past Paper Repository	120	645	475

User inquiries answered represent the number of inquiries or questions from library users that were addressed or answered by library staff through various communication channels, including instant messaging, email and phone calls. This service is essential for helping, guiding and supporting library patrons in accessing resources, finding information and addressing any concerns. During the pandemic, academic staff and students were working from home using online platforms, so the number of inquiries received was high. In 2021, the subject liaison librarian responded to 118 queries from users using instant messaging, email and phone communication methods throughout that year.

The past papers uploaded into the Past Paper Repository refer to the number of previous examination papers stored and made available in the digital repository within the library. These past papers can be valuable resources for students and faculty as they can be used for study, exam preparation and reference to understand the format and types of questions that have been asked in previous exams. As the undergraduates could not physically come to the university library and had to prepare for the examination online, the subject librarian worked hard to upload past papers related to faculty in the last five years without any gaps. Table number 2 clearly shows that the past papers uploaded to the digital repository during the pandemic were very high. By maintaining an up-to-date past papers repository, the subject liaison librarian offers quality library service to the undergraduate despite any barriers.

To enhance the digital literacy skills of the undergraduates, the library will start a 'Diploma in Information and Digital Literacy' shortly. By participating in this diploma programme, the Faculty of Commerce and Management Studies undergraduate will be able to improve their digital information skills with competence in the digital environment.

Conclusion and Recommendations

The primary role of a university library is to support the institution's teaching, learning and research endeavours by granting access to information resources. The services rendered to the user community of the faculty over three years by the subject liaison librarian through various activities are significant. The subject liaison librarian service changed the conventional role played by the academic librarian and through the newly introduced service, offers different activities and programmes to cater to the ever-growing user needs of the faculty. Through the subject liaison librarians service, the Library, University of Kelaniya could perform an up-to-date service to the users. The subject liaison librarian anchored well

with the lockdown period by shifting its service more towards digital platforms and fulfilled the user needs of the faculty satisfactory along with the 'work from home' concept.

The present study concludes that the newly established subject librarian service of the Faculty of Commerce and Management Studies played a vital role in enchanting the faculty's teaching, learning and research spheres. However, the liaison librarian involvement in fulfilling the user needs of the postgraduate students is relatively low compared to the subject liaison activities performed for the undergraduates. Therefore, the liaison activities could be revamped to address the user needs of postgraduates rather than the present. Also, the contribution of the library assistant attached to the research library in the faculty towards the liaison activities is minimal. Hence, to render an exceptional library and information services to the users of the faculty, it is recommended to get the full involvement of the service of the library assistant attached to the research library of the faculty to the subject liaison activities performed by the library.

The experience and results showed in this study through the subject liaison library service can be utilized by the other university libraries to render a better service to the users of their respective universities. Therefore, this study recommends that by introducing new programme such as subject liaison service, the university libraries can upgrade their current service standards to the international level.

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INTERNATIONAL RANKING SYSTEMS AND THEIR RELEVANCE FOR THE RESEARCH PERFORMANCE ASSESSMENT OF UNIVERSITIES: A CASE STUDY OF UNIVERSITY OF JAFFNA

T. Janen[1]

Abstract

This study aimed to explain the relevance of international ranking systems in assessing the research performance of universities. Research publication details of University of Jaffna were retrieved from the annual reports, Scopus database and Web of Science database from the year 2020 to 2022. Furthermore, the research delves into popular international ranking systems and their indicators and weightage, that impact the research ranking of an academic institution. The University of Jaffna published more journal articles (252) and conference articles (601) in 2021 than in other years considered for this study. According to the annual report, University of Jaffna published 29.31% of journal articles during the three years among the total publications. In 2020, 43.38% of the journal articles were published in Scopus followed by 40.47% in 2021 and 48.77% in 2022. Since, THE world university ranking, QS ranking and SCImago ranking rely on Scopus database, these ranking systems considered only 43.38%, 40.47% and 48.77% of research publications during 2020, 2021 and 2022 respectively to measure the University of Jaffna research-related indicators. URAP ranking considered 28.57%, 27.38% and 29.09% of the total University of Jaffna publications for the ranking. Webometric considered the Google profile details of the research publications, which include only the institutional email ID profile research publications. Nearly 59.13% of the staff have their Google profiles under institutional profile, which contribute to webometric ranking. This study revealed that less than 50% of the research output was considered by the popular international ranking systems to measure the research-related indicators of University of Jaffna. It is because of data sources used by the ranking systems. Further, this study explained that, the popular ranking systems failed to use holistic approach to measure the research performance of the University of Jaffna and discussed the shortcoming in methodology follow and transparency. Ranking numbers of higher education institutes may have impact on policy making and the policy makers should consider the shortcoming when these were used as information source. Also, it recommended that, a national level ranking can be developed to measure the performance of higher education institutes by considering specific needs and objectives of the higher education institutes rather than relying solely on the international ranking systems.

Keywords: *International ranking systems, Research performance, University of Jaffna, Higher education institutions.*

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Introduction

Higher Education Institutions (HEIs) play a significant role in society through raising awareness, knowledge creation, skill development and research development. University Grants Commission (UGC) of Sri Lanka is the prime body of the university system in Sri Lanka and is involved in planning and coordinating university education, fund allocation to HEIs, maintaining academic standards and regulating administration and student admission. There are seventeen universities, nineteen institutes, two campuses and six universities under different ministries managed by UGC. In developing countries, the broader economic and social objectives are expected to be achieved through the higher education systems (Fernando et al., 2018). HEIs in Sri Lanka face many challenges in conducting research (University Grants Commission, 2014). The research capacity of a country can be measured through the percentage of Gross Domestic Product (GDP) spent on research, number of researchers, number of publications in refereed journals and number of patents (The World Bank, 2022). Accordingly, Sri Lanka allocated 0.13% of its Gross Domestic Product for research in 2018 whereas the world average is 2.2 percentage (The World Bank, 2022). Sri Lanka focused research in six disciplines, such as: natural science, engineering and technology, medical science, agricultural science, social sciences and humanities and other sectors (Fernando et al., 2018).

There are many international ranking systems developed by various organizations to measure the performance of higher education institutions (Nassa et al., 2023). International ranking systems have a significant impact on the reputation and prestige of an institution, student selection, research performance and collaboration, funding and investment, policy and institutional development etc. Around seventeen international university ranking systems have been developed by multiple institutions, policymakers, governmental organizations, news media etc. (Nguyen & LeBlanc, 2001).

Number of studies have discussed about the merits and demerits of different ranking systems, among them few are reviewed for this study. Wijetunge (2021) discussed about the research productivity of Sri Lankan universities. The study found that the research productivity, impact and collaboration are the major aspects considered by the ranking systems and few Sri Lankan universities are ranked in the international systems. Harvey (2008) critically reviewed, ranking of higher education institutions can be done using composite index, rather than using a set of indicators that are combine into a single index. Most of ranking systems were largely based on what can be measured rather than what is relevant and important (Harvey, 2008). Regarding the determinants of quality national

higher education system, Pietrucha (2018) pointed out all universities in a given country should share common characteristics that determine their position in the rankings and revealed one of the key factors determining the standing of a university in the World University Rankings is the size of the country's economy. Further, it can be interpreted that GDP reflects the economic potential of a country, which easily translates into the funding necessary for securing academic excellence of universities. Further, a relationship exists among per student expenditure in tertiary education and the overall Academic Ranking World Universities Score per million habitant; it is understandable that, higher funding in higher education exhibit higher excellence in university system (Michavila & Martinez, 2018).

The following five ranking systems are popular among Sri Lankan Universities (Wijetunge, 2021) which are the Times Higher Education (THE) ranking, Quacquerelli Symonds (QS) ranking, SCImago Institutions (SCI) ranking, University Ranking by Academic Performance (URAP) and Webometric ranking (Wijetunge, 2021). Different ranking systems uses different methodologies and criteria to assess university performance. The ranking position on a university may vary depending on the specific focus and weightage assigned for indicators used. It is recommended to use multiple rankings to gain a comprehensive understanding about the university performance (Abramo & D'Angelo, 2015).

Research performance of the university plays a major role in the international ranking. The quality of the research performed, impact, number of publication in prestigious journals will enhance the visibility and recognition of the university (Abramo & D'Angelo, 2014). Most of the ranking systems allocated more weightage for the research performance, THE World ranking allocated 30%, QS -20%, URAP -100%, SCImago – 50% and Webometric - 50% (Dugerdil et al., 2022). Different ranking systems rely on different data sources to assess and compare the performance particularly for scholarly data. THE World ranking, QS and SCImago collect research data from Scopus database, URAP collect from Web of Science and the Webometric ranking collect from Google Scholar (Benito et al., 2020). It shows that, different ranking systems use different indicators and data sources to measure the research performance of an institution. This study aimed to answer the three research questions,

1. What are the major research indicators used by the popular ranking systems?
2. What are the data sources used by the ranking systems to gather research data?
3. Can international ranking systems assess the complete research performance of the University of Jaffna?

Methodology

Answer to the research questions, the study focused on five major international ranking systems namely, Times Higher Education World University Ranking, University Ranking by Academic Performance Quacquarelli Symonds World University Ranking, SCImago institutional ranking and Webometric ranking. These ranking were selected due to their popularity among the Sri Lankan universities (Wijetunge, 2021). Complete ranking methodologies and data were retrieved from the official websites of respective ranking systems for the year of 2020, 2021 and 2022. University of Jaffna annual reports were used to collect data on the university publication details for 2022, 2021 and 2022 under different types of documents (University of Jaffn, 2021-2022). Scopus and Web of Science indexed publications were retrieved from Scopus and Web of Science databases during the study period and university name as "address." Collected data were analyzed using MS Excel to compare the difference between the annual report and database.

Results

Main research indicators used by five university ranking systems are depicted in Table 1. University Ranking by Academic Performance - developed by Informatics Institute of the Middle East Technical University, Turkey in 2010 - assigned 100% of the total score for the research performance. Times Higher Education World Ranking - developed by Times Education Institution during 2004 - assigned 62.5% of the total for research while SCImago assigned 50%, Webometric assigned 50% and QS assigned 20% for the research performance assessment. Scopus database used by the THE, QS and SCImago to retrieve research data and URAP used Web of Science. Webometric ranking uses Google Scholar to collect transparency and excellence related data. SCImago defined a benchmark for an institution become eligible for SCImago ranking. At least 100 works should be included in the Scopus database during the last year of the selected time period and citable documents must represent at least 75% of total documents published by the institution.

Table 1: Main Research Indicators Used by the University Ranking Systems

Ranking System	Major Indicators	KPI	%	Data Sources
Times Higher Education World University Ranking (THE)	Research (Volume, income and reputation) 30%	Reputation survey, Research income Research productivity	18% 6% 6%	Scopus database
	Citation (Research influence) 30%		30%	
	International Outlook (staff, student and research) 7.5%	Proportion of international students Proportion of international staff International collaboration	2.5% 2.5% 2.5%	
QS Ranking	Citation per faculty	An indication of research impact	20%	Scopus database
University Ranking by Academic Performance (2022-2023 ranking indicators)	Current Scientific Productivity (2021)	Articles published in 1st, 2nd, and 3rd quartiles (JIF) journals	21%	Incites
	Citation (2017-202)	Research impact Number of citation received in 2017-2021 for the documents published in 2017-2021.	21%	Incites
	Total document (2017-2021)	Measure of sustainability and continuity of scientific productivity. Including conference papers, reviews, letters, discussions, scripts and journal articles	10%	Incites
	Article impact total	Research quality corrected by the institution's normalized.	18%	Incites
	Citation Impact Total (2017-2021)	Research quality corrected by the institution's normalized.	15%	Incites
	International collaboration (2017-2021)	Number of articles published in collaboration with foreign universities.	15%	Incites
SCImago Institutions Ranking	Research (50%)	Normalized impact (NI)	13%	Scopus database
		Excellence with leadership (EwL)	8%	
		Output (O)	8%	
		Scientific leadership (L)	5%	
		Not own journals (Not OJ)	3%	
		Own journals (OJ)	3%	
		Excellence (Exc)	2%	
		High quality publications (Q1)	2%	
		International collaboration (IC)	2%	
		Open access (OA)	2%	
		Scientific talent pool (STP)		

Ranking System	Major Indicators	KPI	%	Data Sources
Webometric Rankings	Transparency or Openness	Top cited researchers (Number of citations from top 310 authors)	10%	Google scholar profiles
	Excellence or Scholar	Top cited papers(Number of papers amongst the top 10% most cited papers in 27 disciplines)	40%	SCImago database

Source: Times Higher Education World University Rankings (2022); Quacquerelli Symonds World University Ranking (2022); University Ranking by Academic Performance (2022); SCImago Institutional Rankings (2022) and Ranking Web of Universities (2022).

Table 2 presents the number of journal articles, conference articles and books and book chapters published during the period 2020-2022 by University of Jaffna. A higher number of journal articles (252) and conference articles (601) were published in 2021 than in the other two years. There are eleven academic entities publishing their scholarly publications every year related to different disciplines such as, agriculture, engineering, medical science, pure science, applied sciences, social sciences, arts and humanities. More journal articles were published by the Faculty of Science, accounting for 27.53% of the total publications over the three-year period, along with conference articles at 27.17%. The year 2022 saw a high number of books published, with a total of 62. Given the universities' emphasis on encouraging researchers to focus on journal publications, the University of Jaffna contributed 29.31% of the total journal articles published during the three-year period.

Table 2: Publications by University of Jaffna Researchers

Faculties	Journal Articles			Conference Articles			Books Published		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Agriculture	17	15	12	58	65	69	2	1	8
AHS	1	9	9	23	43	29	0	1	1
Arts	0	15	40	0	70	114	-	21	9
Engineering	9	9	33	64	43	25	0	8	7
Hindu studies	5	9	9	20	17	40	7	8	17
Mgt. Studies & Commerce	44	21	31	59	53	38	8	2	4
Medicine	16	79	25	15	101	58	11	4	7
Science	64	65	61	94	120	107	3	3	4
Technology	25	24	21	35	61	15	0	0	1
Library	5	2	2	6	5	6	1	2	1
Unit of Sidha Medicine	3	4	6	11	23	29	3	1	3
TOTAL	**189**	**252**	**249**	**385**	**601**	**530**	**35**	**51**	**62**

Source: University of Jaffna (2020-2022)

Table 3 explains the number of journal articles and the conference articles published in Web of Science (WOS) and Scopus indexed journal during the respective years.

Table 3: Indexed Publications by the University of Jaffna Researchers

Year	Journal Articles	Conference Articles	WOS		Scopus	
			Journal Articles	Conference Articles	Journal Articles	Conference Articles
2020	189	358	54	1	82	18
2021	252	601	69	0	102	31
2022	244	530	71	2	119	24

Source: University of Jaffna (2020-2022), Scopus (2022), Web of Science (2022).

The University Grants Commission of Sri Lanka recommends Scopus and Web of Science (WOS) indexed journals for scholarly publications, giving them more weightage in academic promotions. These two databases are also widely used by various ranking systems as their primary sources of data to measure the research performance of higher education institutions. Number of journal articles published in the two databases were increased with the year. THE higher education ranking assign nearly 67.5% of the total score for research performance and Scopus as data source. According to THE methodology institutional research ranking depends on the number of publications in Scopus database with the institutional name as the author affiliation. University of Jaffna is a multidisciplinary university comprising ten academic disciplines. There are some practical difficulties in universities to collect the full research publication details for annual reports. Table 3 shows that, 43.38% of the total journal articles were published in Scopus indexed journals during 2020. It shows THE higher education ranking consider only 43.38% of journal articles during 2020 to measure its research performance. Since QS ranking and SCImago ranking also use the Scopus database as research data source, those will consider around 40.47% in 2021 and 48.77% in 2022 to measure research performance of University of Jaffna.

URAP ranking uses WOS as a data source for research performance measurement and it assign 100% weightage for the research. Table 3 shows that, 28.57%, 27.38% and 29.09% of the total UoJ publications were published in WOS indexed journals during 2020, 2021 and 2022 respectively.

Webometric rankings consider the research publications in Google Scholar profiles. Google Scholar have number of demerits to consider as the scholarly database (Jacsó, 2005). There are 531 permanent academic staff attached to university of Jaffna during 2022 (Jaffna, 2022) while 314 academics have created their Google Scholar profiles. As a result, 59.13% of staff profiles were contributed for the webometric research performance. Despite demerits, Google Scholar remains a valuable tool for discovering scholarly content and monitoring citation metrics. It can complement other academic databases and profiles but researchers should be cautious in solely relying on it for comprehensive research evaluation.

Discussion

There are seventeen universities established under University Grant Commission of Sri Lanka. Measuring the university performance is very important for its stakeholders such as, students, academics, researchers and administrators of the universities, policy makers and funding agencies. Several ranking systems developed their different performance metrics and indicators to measure the performance with respect to teaching, research quality and impact, reputation, innovation, societal impact etc. These ranking systems uses different data sources to measure the indicators developed.

It is difficult for HEIs in developing countries to compete with developed nations, especially with their research infrastructure, ever evolving academic curriculums and research publications. Most of the university ranking systems in world have put nearly 50% weightage for institutional research portfolios. Research portfolios of a HEIs could be measured by Research Excellence Framework (REF) which includes the number of publications in indexed databases, number of citations, number of highly cited publication etc. The main problem with existing university ranking systems is not following the holistic approach relevant to the ranking indicators, it varies among different ranking systems. These indicators are highly competitive for HEIs in Sri Lanka. Sri Lankan higher education institutions are also adopting sound academic, teaching, administrative and research practices recommended by the Quality Assurance Council of Sri Lanka. Different ranking system adopt with different data sources to collect research data and the university publications in Scopus, Web of Science and Google Scholar have different numbers. It shows that, ranking systems measures the part of the research publications to measure the research related indicators. Number of publications in Scopus and Web of Science indexed journals are differs according to the subject specialty of the university, i.e. Scopus has more extensive coverage of Social Science and Humanities, while Web of Science offers greater coverage for subjects based on

Pure Sciences (Pranckute, 2021). University researchers may choose to publish their research outcomes in authentic local journals with a quality output, even though these choices may not be taken into consideration by international ranking systems. Most of the ranking system's methodologies were not transparent and not follow holistic approach to measure indicators. SCImago defined criteria for HEIs to eligible for ranking and these benchmarks restrict all the HEIs to get ranked by SCImago.

Conclusion

University of Jaffna was positioned at 7th place for SCImago research ranking, 8th place for Webometrics, 4th place for QS regional ranking and not included in THE world ranking and URAP among Sri Lankan universities for 2022. University of Jaffna published 68.72% of the total publication as conference articles, which is also carry an important research output and not considered for the popular ranking between 2020 and 2022. It possess a significant challenge for developing country researchers to publish their manuscript in the international indexed journals, because of cost for the publication, regional level research output, research infrastructure, equipment facilities etc. This study stated that, nearly less than 50% of the research output was considered by the popular international ranking systems to measure the research performance of University of Jaffna because of different data sources used by different ranking systems. Nearly 50% of the research output was not contributed for the University of Jaffna ranking and may have strong research impact for the society. Applicability of international ranking system for Sri Lankan universities may have some limitations and considerations such as, focus on teaching quality, regional difference, data availability, resource constraints, economic conditions and educational priorities. In addition, it has been identified there are challenges associated methodology, shortcomings with identified indicators, divergence in the methodologies of different ranking systems and lack of transparency of methodologies have impact on the ranking of HEIs (Qureshi & Daud.A, 2021). Result of the ranking system may become policy guides for universities or have impact on fund allocation, infrastructure development, student selection etc. Policy makers should consider the merits and demerits of international ranking systems when they use these as an information source for policy making. Finally, this study recommended that, national level ranking can be developed to measure the real performance by considering specific needs and objectives of the HEIs rather than rely on the international ranking systems.

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MEASURING THE ACADEMIC IMPACT OF THE LIBRARY: EXPLORE THE RELATIONSHIP BETWEEN LIBRARY CIRCULATION PATTERN AND STUDENT ACHIEVEMENT IN THE FACULTY OF MEDICINE AND ALLIED SCIENCES (FMAS), RAJARATA UNIVERSITY OF SRI LANKA (RUSL)

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Abstract

Library circulation is an essential function of lending library materials to readers to enhance their knowledge and literacy beyond existence. It is strongly related to the purpose of the activity and the academic career goals. Libraries constantly strive to utilize the most suitable tools and techniques to efficiently manage the borrowing and lending of library materials. The study aims to investigate the relationship between students' library utilization and academic achievement in FMAS and RUSL. The sample consists of students who graduated from 2016 to 2019. The research employed the case study method to collect data through the Koha-integrated library management system. The graduated students' academic performance was collected from the university's annual convocation handbook. Collected data were analyzed using the regression analysis. The analyzed data unveiled a moderately positive significant relationship between library circulation and the performance of students who obtained First Class and Second Class Lower Division with correlation values of 0.96, and 0.95 respectively. These findings contribute to the understanding of how library resources and services impact students' academic achievement and how they will aid the library management in making decisions to enhance the library's learning resources and collection.

Keywords: *Academic impact of libraries, Student's performance, Library usage, Library circulation pattern*

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Introduction

Are libraries the centre of knowledge in today's world? Nowadays, libraries have transformed their existence into virtual libraries. Universities still consider libraries as their heart; technology has digitized the knowledge of the universe. Facilitating unrestricted access to knowledge is imperative for optimal learning outcomes. In particular, universities and libraries have a crucial role in moulding exemplary graduates by ensuring the availability of requisite academic resources and enabling easy accessibility.

Academic libraries have published studies that contribute to the world's knowledge by exploring and establishing connections between library usage and student achievement. According to Jara et al. (2017), libraries encountered several primary challenges, such as the growing need for accountability, financial limitations, increased demands from university stakeholders and users and the requirement for libraries to showcase their worth and impact on undergraduate success and university goals. Furthermore, they emphasized that the students specializing in medical and health sciences tend to utilize digital resources. Allison (2015) conducted research on evaluating the academic power of libraries. Allison highlighted a confident, positive connection between student library resource usage and their academic achievement as indicated by their GPAs (Grade Point Average). Thorpe et al. (2016) revealed that libraries need to articulate the significance of their services by considering their impact on student outcomes. Student persistence rates and GPAs are two outcomes that higher education institutions are particularly interested in. Additionally, Thorpe et al. pointed out that libraries have also implemented conventional business evaluation methods to assess the services. These kinds of methods include value-added assessment, analysis of return on investment and impact evaluation models. The Huddersfield University Library staff have found an unequivocal historical relationship between library usage and degree classification. This indicates that certain student groups utilize library facilities and resources less frequently than anticipated (Collins & Stones, 2014). According to Goodall and Pattern (2011), three sets of data were examined in their study: use of electronic resources, book loans and visits to the library.

Soria, et al, (2013) conducted a study that focused on the relationship between library use and undergraduate student outcomes, emphasizing new evidence for student retention and academic success. The data suggested that first-year students who utilized the library at least once during the fall semester achieved higher grade point averages than their peers who did not access the library during their initial semester. Additionally, they found that the usage of various library services by first-year students was linked to their academic success and

persistence in distinct ways. Specifically, four categories of library resources demonstrated marked and positive associations with students' academic achievement. These include utilizing library workstations (indicating physical utilization within the library premises), accessing online databases, accessing electronic journals and borrowing books. According to Cox and Jantti (2012), the University of Wollongong Library developed the Library Cube, an innovative database and reporting function that integrates library usage data with student data, incorporating demographic details and academic performance information. Upon analyzing this combined dataset, a significant correlation emerged between students' grades and their utilization of the information resources offered by the library. It was possible to consolidate findings from numerous institutions to assist universities in benchmarking their own performance and usage. However, achieving this would necessitate a certain level of collaboration and standardization. A study discovered that students studying particular disciplines at Huddersfield exhibit distinct library usage patterns compared to students in the same disciplines at other institutions (Collins & Stones, 2014). Jara et al. (2017) have expressed that a correlation exists between access to digital resources and the borrowing of print materials. Students who avail digital resources are more inclined to borrow print materials and tend to have a higher average of print material loans compared to those who do not access digital resources. Additionally, research findings indicate that this relationship varies depending on the discipline being studied. Thorpe et al. (2016) indicated a correlation between students' utilization of the library and improved GPAs and higher retention rates. These findings illustrated the significance of the academic library to stakeholders and thereby support the integration of library services into course curricula. Lonsdale (2003) mentioned that research over the past five or six decades has consistently shown a positive relationship between student achievement and school libraries. Whitmire (2002) revealed that, although undergraduates' age was not related to library use, gender and race were related to library use and several college experiences positively correlated to their library use and performance. Cherry et al. (2013) highlighted the usage of electronic resources and GPA is positively correlated for some populations. It also provided persuasive evidence of the library's contribution to students’ academic success. Academic institutions prioritize the augmentation of their physical and digital resource collections.

FMAS Libraries

The Faculty of Medicine and Allied Sciences (FMAS) at the Rajarata University of Sri Lanka (RUSL) features two libraries tailored to the needs of medical students and

healthcare professionals in the North-Central Province. The faculty is situated in the Saliyapura and the Professorial Unit within the Teaching Hospital, Anuradhapura. Since 2017, the Professorial Unit Library has served as a resource centre for the Postgraduate Institute of Medicine (PGIM) of the University of Colombo in Sri Lanka. The Professorial Unit Library and the Faculty of Medicine and Allied Sciences Library arrange for medical students with access to valuable resources and are open on weekdays from 8.30 a.m. to 10.00 p.m. and on weekends from 8.30 a.m. to 5:00 p.m., excluding Poya days. Over one thousand students have availed themselves of these libraries, with 14 batches of students having already benefitted from the resources offered at the FMAS libraries.

The Medical Faculty Library utilizes Koha - an open-source library management software to facilitate the efficient circulation of library materials. Each batch consists of more than 200 students and most of the students register at the library. Medical students tend to "read" more borrow books and access electronic resources. The Koha database includes library users' demographic information, circulation history, books and journals and their locations. The assets of the library are more than 11000 medical textbooks, e-books, journals, periodicals, electronic databases, past examination papers and lecture notes. The libraries at the Professorial Unit and Faculty of Medicine are both equipped with computer facilities. The FMAS library receives an annual allocation of more than two million from the University for the purchase of books and journals. Additionally, the library receives approximately Rs. 300,000.00 worth of books each year from the Sri Lanka Medical and Dental Association (SLMDA) in the United Kingdom as a generous donation. Furthermore, the university generally spends 600 hours of overtime per month for both libraries. PGIM library reimburses internet bills worth Rs.8870.00 monthly and spends Rs.5000.00 monthly as a 'topping up' allowance for the Professorial Unit Library. Hence, FMAS libraries are equipped with relevant resources and facilities for the betterment of students and health professionals.

Students' Performance and Library Circulation

Academic performance at universities is measured primarily through exams, presentations and assignments, but the burden of enhancing student performance rests heavily on the shoulders of library systems. However, assessing the impact of library usage on academic progress poses a unique challenge, as it cannot be measured directly. The key indicators for evaluating the efficacy of libraries include the degree of resource utilization and the frequency of library visits.

Academic performance refers to evaluating students' achievements in different academic subjects. Teachers and educational authorities commonly assess achievement through classroom performance, graduation rates, and outcomes from standardized tests. Performance outcome indicates which students had accomplished specific goals. This research uses graduation books of the graduate students to obtain students' performance where records of attainment of Gold medals, First Class, Second Class Upper Division and Second Class Lower Division are mentioned.

In this study, the researcher aimed to address the existing knowledge gap regarding the contribution of the library to student achievement within the medical faculty. By investigating how the library impacts student outcomes, this research aims to shed light on the important role that libraries play in supporting students' academic success of students in the medical field. The researcher uses students' library circulation history taken from the Koha-integrated library system for measuring library usage. The term "library circulation" refers to the process of managing the borrowing and returning of materials within a library. It involves the movement of books, magazines, DVDs and other resources from the library's shelves to patrons who wish to use them and then back to the library's collection once they are returned. The circulation system typically includes checking out materials, setting due dates, renewing loans, and handling fines for overdue items. Library circulation ensures that library resources are available for use by patrons, tracks the whereabouts of items and maintains an organized and efficient borrowing system for the library's collection (Lisedunetwork, 2018). In this case, the circulation patterns of books were measured using the Koha software in the Medical Faculty Library.

The researcher focused exclusively on graduate students within the faculty who achieved First Class, Second Class Upper Division and Second Class Lower Division classifications as a measure of their performance. Non-accessibility of students' GPAs to evaluate their academic achievement due to administrative constraints was a limitation of the study.

Objectives

The main objective of the study is to explore whether there is a relationship between student library usage and their academic performance during the period of 2016 - 2019.

Methodology

This study employed a quantitative methodology, utilizing secondary data from multiple sources. The data was gathered from the RUSL integrated library management system and a list of graduands published annually by the RUSL during their general convocation ceremony. The study focused on the population of medical students who graduated from 2016 to 2019, as indicated in the lists of graduands while the sample comprised students who achieved First Class, Second Class Upper Division and Second Class Lower Division passes. As the study aimed to explore the relationship between library circulation patterns and students' academic achievement, the independent variable was the students' library circulation pattern, while the dependent variable was their academic achievement. The study measured students' circulation patterns based on the number of books issued to students. At the same time, their academic performance was assessed in terms of the class passes obtained by the students. The data mentioned were analyzed using the regression analysis. Ethical approval for this research was obtained from the Ethical Review Committee of the Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka.

Results and Discussion

The Faculty of Medicine and Allied Sciences at Rajarata University of Sri Lanka admitted its first batch of students (2005/2006), in 2007. However, sufficient facilities available were not available for the library since 2009. The first batch of medical students passed out in the year 2013. In 2009, the Library implemented the Koha–integrated library management system but it was not fully operational until 2015. As such, data collection for the present study began in 2016 and onwards. The basic details of the population are presented in Table 1.

Table 1: Basic Details

Year of Graduation	Academic Year	No. of Students	No Registered in the Library
2016	2008/2009	184	104
2017	2009/2010	180	135
2018	2010/2011	180	155
2019	2011/2012	210	181

Source: Faculty Handbook and Library Registration Book

According to the lists of graduands, their academic performance along with library circulation, are mentioned in Table 2.

Table 2: Gold Medalists and Their Library Circulation

Category	**Library Circulation**			
Gold Medal /Students Achievement	**2016**	**2017**	**2018**	**2019**
Best performance in Physiology	0	11	63	59
Best performance in Biochemistry	2	99	63	11
Best performance in Anatomy	0	2	63	94
Best performance in 2nd MBBS Examination	0	2	63	11
Best performance in Microbiology	2	26	63	13
Best performance in Parasitology	17	0	63	2
Best performance in Community medicine	2	22	0	0
Highest aggregate in Community medicine	0	26	63	0
Most outstanding performance in Community medicine	0	13	79	31
Best performance in Forensic medicine	51	26	211	17
Best Performance in Pathology	17	4	28	13
Best performance in Pharmacology	0	4	60	22
Best performance in Medicine	0	0	5	45
Best performance in Pediatrics	17	40	63	59
Best performance in Surgery	0	22	57	1
Best performance in Obstetrics and Gynecology	17	4	43	0
Best performance in Psychiatry	0	0	0	34
Overall best performance in 3rd MBBS examination	0	0	63	22
Best performance in the final MBBS examination	17	22	57	45

Source: Lists of Graduands 2016-2019

The achievements of the students each year, categorized into First Class, Second Class Upper Division and Second Class Lower Division are mentioned in Table 3

Table 3: Students' Academic Performance

Year	First Class	Second Class Upper Division	Second Class Lower Division
2016	1	11	40
2017	2	24	47
2018	4	28	66
2019	1	17	78

Source: Lists of Graduands 2016-2019

Researcher considered students' achievement of gold medals and class passes as their performance measurements. Table 4 shows library registration of graduates with class passes and Table 5 presents library circulation of class passes in terms of check-outs.

Table 4: Class Passes of Graduates and Library Registration

	First Class			Second Class Upper Division			Second Class Lower Division		
	Number of Students	Registered Library Users	%	Number of Students	Registered library Users	%	Number of Students	Registered Library Users	%
2016	1	1	100%	11	8	73%	40	29	73%
2017	2	2	100%	24	23	96%	47	44	94%
2018	4	4	100%	28	24	86%	66	46	70%
2019	1	1	100%	17	17	100%	78	74	95%

Source: Koha-Integrated Library Management System, RUSL

Table 5: Class Pass Graduate's Library Circulation

	First Class			Second Upper			Second Lower		
	Number of Students	Library Usage	Growth /Decline Rate	Number of Students	Library Usage	Growth /Decline Rate	Number of Students	Library Usage	Growth /Decline Rate
2016	1	17		11	131		40	213	
2017	2	44	159%	24	573	337%	47	1077	406%
2018	4	356	709%	28	1229	114%	66	1924	79%
2019	1	45	-87%	17	642	-48%	78	2168	13%

Source: Koha Integrated Library Management System-RUSL

Further, Figure 1 shows, a consistent growth in the circulation of books by undergraduates annually, with a decline observed in 2019 (potentially attributed to the temporary closure of libraries during the pandemic towards the end of 2019). It is important that graduate students with Second Lower Division confirmed a greater reliance on library books, which exhibited an annual increase in utilization during the year 2018. Furthermore, the usage of books by graduates was observed to be significantly high overall**.**

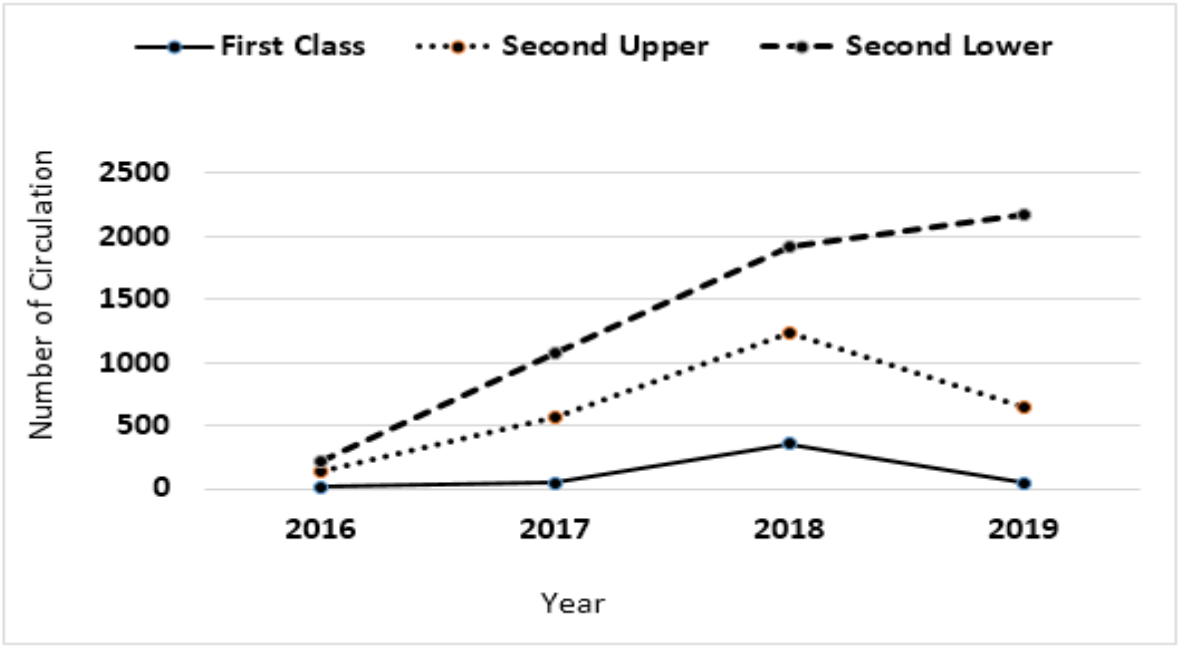

Figure 1: Library Circulation and Their Performances

According to Table 5 the annual rise in library usage among graduates showed a remarkable increase in 2017, with First Class graduates demonstrating an impressive growth rate of 159%. This upward trend continued in 2018, skyrocketing to an astonishing 709%. However, in a surprising turn of events, 2019 witnessed a significant decline of -87%. For

Second Class lower graduates, their library usage experienced a substantial surge of 406% in 2017, followed by a notable increase of 79% in 2018 and a slight increase of 13% in 2019.

When analyzing the library performance of Second Class Upper students, it is worth noting that they experienced steady annual growth rates in 2017 (+337%), 2018 (+114%) and 2019 (-48%). On the other hand, their counterparts in the First Class category achieved a promising increase of 100% in both 2017 and 2018, but encountered a setback in 2019 with a decrease of 25%. Turning our attention to Second Class Upper Division counterpart graduates, their performance exhibited positive growth in 2018 (+114%) and 2019 (+17%). However, this upswing reversed in 2019, with a decline of -39%. Lastly, counterpart graduates in the Second Class Lower Division experienced an annual increase of 18% in library performance in 2017, followed by a further rise of 70% in 2019. Unfortunately, this positive trajectory was interrupted in 2018, resulting in a slight decrease of 2%. The Gold medal receiving graduates also increased in year 2017 by 29% and in year 2018 it was remarkable increased rate was 159% however in year 2019 it was decreased by -21%.

According to the regression analysis for the relationship between library circulation pattern and the graduates (who obtained First Class) academic performance, the correlation coefficient for students who received first-class passes was 0.96. It indicates a strong positive relationship between library circulation and graduates' performance. The R-square value of 0.93 suggests that 93% of the variance in students' performance can be explained by library circulation. Additionally, the p-value of 0.048, which is lower than the common significance level of 0.05, indicates that the regression model is statistically significant.

Furthermore, the correlation coefficient for students who received Second Class Upper Division passes was 0.88. It indicates a positive relationship between library circulation and their performance. The R-square value of 0.78 suggests that 78% of the variance in students' performance can be explained by library circulation. However, the p-value of 0.114 indicates that the model is not significant.

Based on the findings, the correlation coefficient for students who achieved Second-class lower-division passes was 0.95, indicating a strongly positive relationship between library circulation and graduates' performance. The R-square value of 0.91 signifies that 91% of the variability ingratiates performance can be attributed to library circulation. Additionally, the p-value of 0.034, which is lower than the common significance level of 0.05, indicates that the regression model is statistically significant.

Conclusion and Recommendations

The analyzed data unveiled a moderately positive significant relationship between library circulation and the students' achievement in First Class and Second Class Lower Division within the Faculty of Medicine and Allied Sciences at Rajata University of Sri Lanka. These findings greatly enhance the comprehension of the influence that library resources and services wield on the academic performance of students. This newfound knowledge will assist library management in making informed decisions aimed at improving and enriching the library's learning resources and collection. Based on the above findings, the researcher makes the following recommendations:

1. Strengthen Library Resources: Given the significant positive relationship between library circulation and students' academic performance, it is recommended to allocate resources to enhance and diversify the library's collection. Acquiring more relevant and up-to-date materials, including books, journals, and online resources, will provide students with a wider range of resources to support their studies.
2. Improve Library Services: Together with expanding the collection, it is crucial to improve library services. This can be achieved by offering tailored training sessions and workshops to students, increasing access to research assistance, and providing guidance on utilizing library resources effectively. These initiatives will help students make the most of available resources and improve their academic performance.
3. Facilitate Access to Library Materials: It is vital to ensure that library materials are easily accessible to students. This can be accomplished by implementing a user-friendly system that allows for seamless borrowing and returning of materials, as well as enhancing the availability of electronic resources both on-campus and remotely. By removing barriers to accessing library materials, students will be more inclined to utilize these resources, leading to improved academic performance.
4. Conduct Periodic Assessments: To continue monitoring the impact of library resources and services on students' academic performance, regular assessments should be conducted. These assessments can include surveys, focus groups, and interviews to gather feedback from students about their experience with library resources and services. This feedback will help identify areas for improvement and guide future decision-making.

By implementing these recommendations, the university's library management can enhance the support provided to students, adopting an environment where library resources and services positively impact students' academic performance.

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RESEARCH METHODOLOGY COURSE EVALUATION FOR SUSTAINABLE OPEN DISTANCE LEARNING

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Abstract

Course evaluation is very important in both face-to-face and Open and Distance Learning modes as it provides information on the strengths and weaknesses of the course and suggestions for improvement and to support the Sri Lankan government to achieve the sustainable development goal - 4 by 2030. Bachelor of Arts in Library and Information Studies programme (BALIS) includes 10 credit research components as two courses, HSU6406 and HSU6607. Course structures were developed based on the K-SAM model which is described Knowledge, Skills Attitude and Mindset. Twelve sessions were included in the HSU6406 course and both summative and formative assessment methods were used to assess students. The main objective of the study is to evaluate the Research Methodology courses to assess the adequacy and level of understanding of the course content, assessment methods and lecturer support. The paper presents the results of the survey done with 58 Bachelor of Arts in Library and Information Studies students and 6 lecturers. The mixed research design and deductive approach were used to conduct the study. The questionnaires and interviews were used as research methods to collect data from 58 learners and 6 lecturers respectively. Findings indicated that the majority of students (96%) were satisfied with the course content and 82.5 % were satisfied with the assessment methods; 98% of them stated that feedback given to assessments helped them to improve and 46.8% of the respondents stated that most preferred assessment method was 'presentation'. Further, findings indicated that 91.7% were happy with the role played by the lecturers and 93.7% of students were happy with the guidance given to conduct their research studies. BALIS learners (100%) are happy with the knowledge and skills gained from the course but they were not happy with the workload of the courses. The main problems affected by the 30% of the learners were 'not enough practice and guidance on writing research project' and time management. 'Allocated time is not enough to cover all sessions with practical' was the main problem affected by 70% of the lecturers. Emphasizing more practical sessions to alleviate workload pressures, introducing training on academic writing and time management and organizing a workshop to equip lecturers with supervision, marking, and comprehensive documentation skills for two courses are recommended

Keywords: *Course evaluation, Distance learning, Research methodology, Sustainable development*

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Introduction

Course evaluation is very important both in face-to-face and in Open and Distance Learning (ODL) modes as it provides information on the strengths and weaknesses of the course and suggestions for further improvement. The success and effectiveness of the ODL mode teaching and learning system largely depend on the self-learning materials. According to Moore and Thompson (1990), the most important components of evaluation are the print materials and the learner support which contribute to the success or failure of a course. These materials are the backbone for the open and distance learner (Subrahmanyam & Swathi, 2018). The task of writing effective self-learning material is quite challenging. It is necessary to inculcate teachers in learning material to transact the academic contents like that of a classroom situation making lessons learner-friendly referring to several examples and references as self-learning is taking place in ODL mode.

The Sri Lanka Quality Framework (SLQF) specifically states that "an undergraduate, reading for a degree at Level 6, should complete a research component equivalent to a total of at least 6 credits of SLQF level 6" (University Grants Commission-Sri Lanka, 2018). Accordingly, 10 credit research components were included in the Bachelor of Arts in Library and Information Studies (BALIS) programme curriculum as HSU6406 and HSU6607 which are compulsory courses in the BALIS Programme offered by the Faculty of Humanities and Social Sciences. Course structures of both courses were developed based on the K-SAM model which describes Knowledge, Skills, Attitude and Mindset as given in Figure 1 (Seneviratne, Gunasekera & Balasooriya, 2018). The rationale for using the KSAM model is that the model clearly explains the level-wise improvement of the student's not only knowledge and skills but also attitudes of the mind. Twelve sessions which were developed applying the KSAM model are included in the HSU6406 Research Methodology (RM) course to be completed in the first semester of the final year. A research project which is valued at 6 credits (HSU6607) should be completed in the second semester in the same year. Summative and formative assessment methods are used to assess learners in both courses. Tutor mark assignments, Continuous assessment tests, research proposal submission, article review and progress presentation are the formative assessment methods while final examination and the submission of the final report are the summative assessments that are included in both courses.

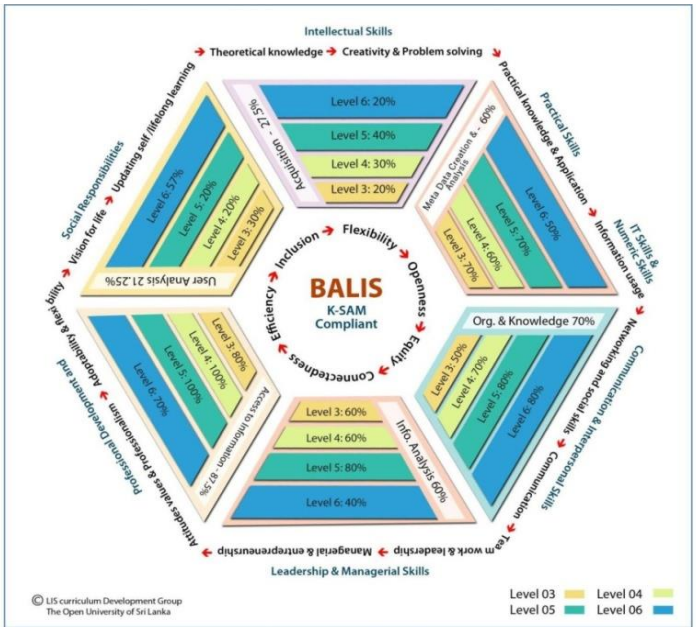

Figure 1: BALIS Curriculum Model

Sustainable Development Goal (SDG) 4 is quality education and it "ensures equal opportunity in access to quality learning opportunities at all levels of education in a lifelong perspective" (Sri Lanka Voluntary National Review, 2018). Further, it increases the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship, inclusive, equitable and relevant quality education is ensured while promoting lifelong learning opportunities for all; is the most related goal for 17 to the universities. It ensures access to and participation in quality education. Quality education is the key that will allow many other sustainable development goals to be achieved. When people can get quality education they can break from the cycle of poverty. Therefore, education helps to reduce inequalities and to reach gender equality. It also empowers people everywhere to live more healthy and sustainable lives. Education is also crucial to fostering tolerance between people and contributes to more peaceful societies (Samantaray, 2017).

Further, the Sustainable Development Solutions Network has identified six areas in which major societal 'transformation' is needed quickly to achieve the SDGs (Sachs et al., 2022). They include: i. Education and social protection (SDG 1,4); ii. Health system (SDG 3); iii. Zero-carbon energy (SDG 13,15); iv. Sustainable food (SDG 2); v. Sustainable urban infrastructure (SDG 11); vi. Universal digital services (SDG 9) and to support all other investments including online education. Due to these reasons, the ODL system should be

improved to provide quality education in the country. Therefore, the current study was conducted to evaluate the RM course to make the easy to deliver.

Objectives

The main objective of the study is to evaluate the Research Methodology courses to assess the adequacy and level of understanding of the course content, assessment methods and lecturer support.

Accordingly, the following specific objectives were formulated to proceed with the study,

- To evaluate course material, in terms of presentation style, and level of understanding of the content of the HSU6406 course.
- To evaluate the assessment methods used in HSU6406 and HSU6607 courses.
- To explore the problems encountered in the completion of the research project by the BALIS learners
- To identify problems encountered by the lectures when guiding the research project.

Methodology

The mixed research design and deductive research approach were used to carry out the study. Questionnaires and interviews were used as research methods to collect data from learners and lecturers respectively. The questionnaire included open and closed-ended questions related to the content of the materials, assignments, and barriers. Some of the items in the questionnaire were in Likert type five-point agreement scale varying from strongly agree (1) to strongly disagree (5). A total number of 58 learners who completed the course were surveyed through a questionnaire using Google Forms and a 100% response rate was received. Interviews were conducted with 6 lecturers who supervised research projects using an interview schedule over the phone. Out of six lectures, three lecturers conduct day schools as well. Percentage-wise calculations were done on the qualitative data collected from open-ended questions and interviews after identifying response categories and recording the individual responses. Mean values were calculated for some of the items using SPSS.

Results and Discussion

Table 1 presents the feedback given for the content of the HSU6406 course. The mean score of 4.32 was recorded for the 4th session while the lowest mean score, 3.82 was recorded for the 11th session on the content richness. There were positive responses to the statement

'material is in self-learning mode' as all mean values recorded were high for all sessions. Learner perceptions were positive for the statement 'content is easy to understand' as the frequency of the mean values is high for all sessions except for the second session. The comments given for the second session in the questionnaire were that 'many technical jargons and cannot understand'. Therefore 'Types of scientific research' session should be revised.

Table 1: Content Evaluation

No	Session	Content is Rich with Knowledge	Content is Easy to Understand	Content is in Self-Learning Mode	Mean Value
1	Introduction to research methods	4.19	3.47	3.82	3.90
2	Types of scientific research	3.98	2.68	3.95	4.00
3	Research process	3.91	3.91	3.47	3.98
4	Writing literature review	4.32	4.12	4.00	4.10
5	Research problem and objective	4.07	3.80	3.88	3.98
6	Selection of research design	3.93	3.93	4.00	4.00
7	Designing research	3.89	3.96	3.97	3.98
8	Data collection methods and research tools	4.27	3.91	3.91	4.14
9	Methods of data analysis	4.00	3.81	3.98	3.98
10	Formulation of research proposal	3.92	4.00	4.00	4.02
11	Ethics in Social Science research	3.82	3.92	3.98	3.96
12	Writing a conclusion and research findings	4.23	4.02	4.00	4.12

Responses received for the performance of the lecturers who taught 12 sessions which are given in Table 1 above, were positive because high mean scores were recorded for 12 sessions. Learner perceptions were positive on explaining the content in the 12 sessions as the frequency of the mean values is high.

As depicted in Table 2, students were satisfied with the assessment methods used to evaluate and 'feedback given for the assessments' as high mean scores, 3.93 and 4.24, were

recorded respectively. A majority (98%) of them have stated that feedback helped them to improve. In context to the three most preferred methods of assessments: 46.8% of respondents stated presentations; 30% article reviewing and 21.3% proposal writing.

Table 2: Feedback on Assessments

Statements	Mean	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Assessment methods are convenient	3.93	51.2%	31.3%	16.7%	0	0
Satisfied with feedback given for the assessments	4.24	31.3%	62.5%	0	0	0
Feedback helps me improve	4.43	47.9%	50%	2.1%	0	0

A majority (90%) of BALIS learners were positive about the support given by the lecturers and the guidance given to complete the academic activities as indicated in Table 3.

Table 3: Perceptions of the Guidance Provided by Lecturers

Lecturer's support	Mean	Strong. Agree	Agree
The support given by the lecturer is appreciated	4.43	47.9	43.8
The lecturer is good at explaining things and guidance given	4.49	58.3	35.4

According to Table 4, 91% of the students stated that they were satisfied with the Research Methodology courses as they were able to improve their knowledge (95%) and skills (100%) with the completion of both courses as high mean scores of 4.49 and 4.41 were recorded respectively and shown in Table 4 below. A majority (98%) were able to use the gained knowledge to complete the research project and 96% of them hope to use that knowledge for future research studies. However, many of them (54%) think that ' Workload of the course is too heavy' while 14.6% of them disagreed with the statement. The feedback indicates that most of the learners need more support/motivation to follow these two courses.

According to the data presented in Table 5, 30% of the learners identified "insufficient practice and guidance in writing a research project" as the primary issue they face, while 28% of them indicated "time management" as the second most significant challenge. It is worth noting that many of the learners entering the BALIS program hold diploma certificates and

lack prior experience in research methodology, contributing to their struggle with practice. Furthermore, a substantial majority of BALIS learners are adults and employed, with 98% of them being married and bearing social responsibilities, making effective time management a common concern. Additionally, other issues mentioned include a lack of proficiency in proposal writing, academic writing and analysis (21%), a shortage of confidence (18%), difficulties in finding relevant literature (17%), and a lack of familiarity with reference styles (14%). Addressing these challenges will empower learners to complete their research projects within the given time frame.

Table 4: Overall Feedback

Statements	Mean	Strongly Agree	Agree	Neutral	Disagree
Improved knowledge of the RM course	4.49	54.3%	41.7%	4%	0
Course developed my research skills	4.41	50%	50%	0	0
I was able to apply knowledge gained from the HSU6406 course to complete a research project	4.49	52.2%	45.8%	0	0
I can apply the knowledge gained from this course to future research studies	3.53	45.8%	50%	4.2%	0
Satisfied with the RM course	4.41	43.8%	47.2%	0	0
The workload of the course is too heavy	3.53	12.4%	41.7%	31.3%	14.6%

Table 5: Issues Faced

Issue	Percentage
Not enough practice and guidance in writing a research project	30%
Time management	28%
Poor knowledge of proposal writing, academic writing and analysis	21%
Lack of confidence in conducting research	18%
Difficult to find articles related to the research topic	17%
Lack of knowledge of reference styles	14%

Data collected from interviews conducted with lecturers were also analyzed. Seventy percent of them stated that the allocated time is not sufficient to cover all sessions with practical components. Three-day schools were allocated to discuss academic problems as it is a 4-credit course, but more practical sessions should be introduced. Further, findings revealed that some students do not follow instructions because they lack a proper understanding of the research project at the beginning of the course. These findings confirm the responses given by the learners, as 18% of them mentioned a lack of confidence in conducting research. Additionally, all lecturers (100%) emphasized that many learners do not know different searching techniques and referencing styles. This finding aligns with the responses given by the learners, as 17% of them were unable to find relevant articles related to the study and 14% of them struggled due to a lack of knowledge about reference styles. Furthermore, 95% of them reported a lack of guidance provided for research supervision, while 45% of supervisors expressed concerns about a lack of knowledge regarding course learning outcomes. Given that the BALIS program recently started, it is important to streamline all activities and conduct progress evaluations with the lecturers who support the research project, as suggested by all lecturers.

Conclusion and Recommendations

It can be concluded that all objectives were successfully met based on the study's findings, which provided solutions to the identified challenges. While BALIS students generally express satisfaction with various aspects of the course, such as its content, presentation style, comprehension of sessions, knowledge acquisition, evaluation methods, and the lecturers' roles, there is still room for improvement in terms of academic support. Specifically, 30% of students face practical difficulties when it comes to writing research proposals, and 28% struggle with time management. Additionally, 21% have limited proficiency in academic writing and analysis, while 18% lack confidence in conducting research. Furthermore, 17% of learners encounter difficulties in locating relevant articles, and 14% cite a lack of awareness regarding reference styles. The heavy workload of the course is also a concern, affecting 54% of students. Notably, the most preferred assessment method among learners is "presentation," as it enhances their communication and presentation skills. However, there is less enthusiasm for mandatory assessments like proposal writing (30%) and article reviewing (21.3%). Learners do not anticipate TMA (Tutor-Marked Assignments), CAT (Continuous Assessment Tests), or OBT (Open Book Tests) for research methodology courses, as indicated by their low response rates. Therefore, it is advisable to increase student

engagement by introducing more practical sessions. Furthermore, 70% of lecturers express concerns about insufficient time to cover all sessions and a lack of guidance for supervision. Lecturers suggest inviting supervisors for feedback sessions, which should be taken into consideration. Overall, these comments and suggestions should inform efforts to enhance the Research Methodology course and ensure effective teaching and learning within the BALIS program.

The following recommendations have been put forth to enhance the activities related to both courses:

1. Revise Session 2, "Types of Scientific Research," by incorporating glossaries and eliminating technical jargon to facilitate better comprehension.
2. Introduce more practical sessions aimed at boosting learners' confidence in academic writing and various analytical methods using Excel and SPSS.
3. Organize counselling sessions for students to address time management difficulties.
4. Conduct training sessions to motivate students and alleviate the course workload, while also offering instruction on different searching techniques and referencing styles to enhance their skills.
5. Arrange reflective practice sharing sessions to motivate and boost the confidence of learners, with the guidance of senior students.
6. Develop a one-credit course focused on various referencing styles as a compulsory assessment and upload it to the Learning Management System of HSU6607 course.
7. Provide training for lecturers on how to guide research projects in alignment with the course learning outcomes, especially since external professionals are involved in supervising and evaluating the projects.
8. Invite supervisors to participate in feedback sessions, particularly concerning research proposals and progress presentations.
9. Create a comprehensive document that can serve as a reference guide for lecturers, streamlining all activities, including guidance for proposal writing, presentation, supervision guidelines, and the inclusion of a marking scheme.

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UNDERGRADUATES' PERCEPTIONS OF THE USER EDUCATION ROGRAMMES IN ACADEMIC LIBRARIES: A CASE STUDY AT THE LIBRARY, WAYAMBA UNIVERSITY OF SRI LANKA

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Abstract

This study aimed to assess the user education programme on Smart Searching Techniques for Online Resources conducted for the final-year students of the Faculty of Agriculture and Plantation Management, Wayamba University of Sri Lanka. To recognize undergraduates' perception of the usefulness of the session and to examine and identify the challenges when searching for information online were specific objectives. The survey method was used for the research and the questionnaire was used as the data collection instrument and circulated as a Google form. Out of 60 participants, 46 responded resulting in a respondent rate of 76.6% and 91.3% of them indicated they were satisfied with the overall organization of the lecture and hands-on training. Furthermore, 93.5% found the content relevant, and 89.2% found it interesting. The participants also reported high satisfaction levels (91.3%) with the overall effectiveness and usefulness of the session. Lack of facilities for accessing online information outside the university, the complexity of online resources and limited collaboration between the library and the faculty were recognized as the challenges faced by undergraduates. To overcome such librarians should be facilitators as well as collaborators. The introduction and creation of innovative user education programs characterized by a supportive environment and creative teaching strategies are recommended.

Keywords: *Academic libraries, Information literacy, Information searching techniques, Online resources, User education programmes*

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Introduction

The Internet is widely used by undergraduate communities within universities, both domestically and across various universities. Within the university environment, the Internet and online resources have gained popularity as valuable sources of information. Websites, electronic databases, digital libraries, online catalogues (OPAC), institutional repositories, and online resources have increasingly become preferred information sources, often chosen over printed resources. While many university teachers have recognized the educational potential of the Internet, along with its motivating power, they often face challenges in finding meaningful applications for it in their teaching practices. This challenge is reflected in the perception of many teachers that their students' online search skills surpass their own. Library user education programs play a crucial role in helping undergraduate students become aware of library resources and services. These programs also aim to enhance research skills among students, contributing to the development of a research culture within the university (Punchihewa et al., 2018).

Academic libraries may need to allocate additional time for organizing demonstrations and designing training programs or workshops. The significance of these events is determined by the various methods employed for user education. Librarians can pinpoint specific areas for conducting user education programs to enhance navigation and information retrieval. These programs cater to various learning approaches, including collaborative learning, individual learning, discovery-based learning, focused learning, and library classroom learning (Somaratna, 2022). Furthermore, computer literacy, user education, and online search skills have a significant impact on the utilization of electronic resources among undergraduate students (Kehinde et al., 2020). Extensive research has confirmed that undergraduate students often lack adequate search skills and do not employ standard criteria for evaluating information. Consequently, librarians must design and implement user education programs in collaboration with faculty to enhance students' familiarity with information retrieval skills and strategies (Wijetunge, 2019).

The Wayamba University Library regularly conducts a variety of user education programs tailored to educate the university community about library services, facilities, information sources and search strategies. These initiatives equip users with fundamental knowledge to maximize the utilization of library resources, ultimately increasing awareness of library offerings and providing undergraduate students with essential information retrieval techniques falling under the broader concept of information literacy (IL) (Kehinde et al., 2020). Effective information retrieval in research not only aids in preventing research

duplication but also keeps researchers well-informed about the latest advancements in their respective disciplines, thus ensuring they remain up-to-date. Therefore, individuals should possess a solid understanding of search techniques and be equipped with IL skills. To access specific, high-quality, and accurate information, undergraduates should be proficient in finding information from information systems. According to the American Library Association (1989), "to be information literate, a person must be able to recognize when information is needed, possess the ability to locate, evaluate, and effectively use the necessary information." Different search options are available depending on the users' level of interest and the amount of information they seek. The searching techniques employed in these programs are designed to retrieve the necessary information effectively. Effective searching also involves planning, both conceptually (using keywords and phrases) and through the application of Boolean operators, Boolean logic and truncations/wildcards.

In March 2023, the library conducted user education programs on Smart Searching Techniques for Online Resources in response to an invitation from the Faculty of Agriculture and Plantation Management (FAPM) at Wayamba University of Sri Lanka (WUSL). FAPM comprises four departments: The Department of Agribusiness Management, the Department of Horticulture and Landscape Gardening, the Department of Biotechnology and the Department of Plantation Management. Approximately 130 students from the 2017/18 intake of FAPM at WUSL were preparing for research projects to be presented at the Agriculture Research Symposium (AGRES). The Smart Searching Techniques for Online Resources program proved immensely beneficial, equipping students with a wide range of web searching techniques and strategies, while also highlighting the possibilities and limitations of these strategies and the skills they entail. The program included practical hands-on training and provided subject-based guides to online resources.

Objectives

This study aimed to assess the user education programme on Smart Searching Techniques for Online Resources for final-year students of the Faculty of Agriculture and Plantation Management, Wayamba University of Sri Lanka to recognize undergraduates' perception of the session and to examine and identify the challenges when searching for information online were specific objectives.

Methodology

The survey method was used for the research and the questionnaire was used as the data collection instrument. It was circulated as a Google form among participants after the user education programme on Smart Searching Techniques for Online Resources. The descriptive-analytical method is used for the feedback analysis of this study.

Results and Discussion

Out of 130 final-year students, 60 participated in the session. Out of 60 participants, 46 respondents with a response rate of 76.6%. Table 1 illustrates the perception of the participants about the user education programme on Smart Searching Techniques for Online Resources.

Table 1: Perception of Smart Searching Techniques for Online Resources Programme

Question	Extremely Satisfied %	Satisfied %	Neural %	Dissatisfied %	Extremely Dissatisfied %
1. Overall organization of the lecture & hands-on-training	34.8	56.5	5>	5>	00
2. Relevant to the content discussed	43.5	50	5>	5>	00
3. Interest in the session	28.3	60.9	5>	5>	00
4. Preparation for the topic before the guest lecture by the participants	13	52.2	23.91	10.9	00
5. Overall effectiveness of the programme	32.6	58.7	5>	5>	00
6. Usefulness of the session	41.3	50	8.7	5	00

According to Table 1, the majority of the participants expressed satisfaction, with 91.3% of them indicating they were satisfied with the overall organization of the lecture and hands-on training. Furthermore, 93.5% found the content relevant and 89.2% found it interesting. The participants also reported high satisfaction levels (91.3%) with the overall

effectiveness and usefulness of the session. Notably, 65.2% of participants had already prepared their research topics for AGRES.

Moreover, 20.7% of participants mentioned that this session was their first hands-on training experience with Google Scholar and 41.2% believed that this session significantly improved the research skills of undergraduate students (final year) and should have been conducted at the beginning of the semester. Impressively, 17.4% of participants commended the resource person and the presentation style was rated as excellent, encouraging them to utilize high-quality information effectively.

Additionally, in response to open-ended questions, many participants expressed that they lacked practical knowledge in retrieving digital information from scholarly sources, faced challenges in identifying reliable information for literature surveys and needed guidance on how to avoid fake or predatory publications. Furthermore, this study revealed that undergraduate students became more aware of scholarly databases, scholarly open-source databases, IRs, OPACs and quick-access guides for printed materials when conducting searches within academic databases.

Challenges

During the session, the researcher identified several challenges faced by AGRES students. These challenges included: a lack of facilities for accessing information outside the university; the complexity of online resources and limited collaboration between the library and the faculty. Additionally, undergraduate students commonly face other issues such as: lack of awareness regarding the differences between databases and the Internet: difficulties in selecting appropriate databases: challenges in conducting effective database searches and a general lack of database literacy.

Conclusion and Recommendations

The study's conclusion emphasized the significance of the "Smart Searching Techniques for Online Resources" awareness program, tailored for AGRES students at the Wayamba University of Sri Lanka, who sought both quantitative and qualitative knowledge in information searching techniques for scholarly digital information retrieval through online resources. This initiative aimed to address the specific needs of undergraduate students and align with the principles of information literacy. To ensure the success of similar endeavours in the future, the study recommended several actions. Firstly, librarians should actively assume the role of facilitators in enhancing undergraduates' IL skills. Secondly, close

collaboration with academic coordinators and colleagues is essential for effective program implementation. Lastly, there is a call for the introduction and creation of innovative user education programs characterized by a supportive environment and creative teaching strategies to yield knowledgeable and proficient students as the university's ultimate output.

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CATALOGUING CHALLENGES AND MARC21 STANDARDIZATION FOR OLA-LEAF MANUSCRIPTS: ENHANCING ACCESSIBILITY

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Abstract

Ola-leaf manuscripts in Sri Lanka hold immense cultural value as repositories of history, local knowledge, and ancestral wisdom. This study explores the challenges of cataloguing and facilitating access to these manuscripts while proposing a standardised Machine Readable Cataloguing (MARC21) format tailored explicitly for enhanced accessibility. The study employed a mixed research method approach. The study involved interviews, questionnaires, observational methods, and library web surveys, focusing on selected Ola-leaf libraries in Sri Lanka. These findings shed light on the inadequate management and documentation of Ola-leaf manuscripts in sample libraries and created a usable MARC 21 format for Ola-leaf. Alternatively, a comprehensive mechanism for organizing metadata about Ola-leaf manuscripts is necessary to facilitate easy searching and sharing of bibliographical data at local and international levels. Therefore, the study proposes adopting and implementing a MARC21 format explicitly designed for Ola-leaf manuscripts, enabling enhanced cataloguing and accessibility. Key MARC21 fields selected for this purpose include control information, main entry, title and title-related fields, physical description, notes and subject-added entry, ensuring comprehensive representation and searchability of the manuscripts. Standardizing cataloguing practices will contribute to preserving and disseminating these invaluable cultural artifacts. However, addressing the challenges and limitations in current cataloguing practices is crucial and actively involves library professionals in Ola-leaf cataloguing endeavours. In conclusion, implementing the standardised format and embracing consistent cataloguing practices will contribute to preserving and transmitting valuable information and knowledge contained within Ola-leaf manuscripts, enriching our understanding of history, language, literature and other subjects encompassed in these remarkable cultural artifacts.

Keywords: *Ola-leaf manuscripts, MARC21, Cataloguing, Metadata*

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Introduction

Ola-leaf manuscripts are of paramount cultural significance in Sri Lanka as they serve as invaluable reservoirs of historical records, indigenous knowledge, and ancestral sagacity. These ancient texts hold profound wisdom and play a crucial role in preserving the heritage and traditions of the nation. The *Mahindagamanaya*, a pivotal event in Sri Lankan history, can be regarded as a significant turning point that triggered the widespread adoption of writing throughout the country (Lagamuwa, 2006). Historical evidence highlights the profound significance of the *Aluviharaya* in the history of writing, as it served as a sanctuary where Buddhist monks diligently preserved the *Tripitaka* during the reign of *King Walagamba* (Mahavansa, 33.102–103). The *Aluviharaya* gave Sri Lankan writers a newfound perspective, infusing their works with fresh inspiration. With the backing of the state, the art of Sinhalese writing experienced a transformative evolution, flourishing not only within temple premises but also beyond, permeating various aspects of Sri Lankan society. Ola-leaf manuscripts were vital in establishing Pothgulas (libraries) within these temples. The Kotte period is widely recognised as the pinnacle of Ola-leaf writing, witnessing a remarkable surge in the creation and preservation of written works on these traditional materials.

During this time, numerous Ola-leaf manuscripts were meticulously copied, and an impressive collection of new Ola-leaf manuscripts emerged. These manuscripts covered a wide array of subjects, encompassing music and art, religion, language literature, medicine, veterinary medicine, yantra mantra, fiction, customs and ceremonies, law, borders (Kadima), stories (Withthi), history, taxes and income, agriculture, state governance, Buddhist education, indigenous medicine and astrology. These valuable manuscripts were written in multiple languages, including Pali, Sinhala, and Sanskrit, reflecting the rich linguistic diversity of the era. Notably, some Ola-leaf manuscripts were composed in both languages, serving as a testament to the intermingling of cultural and linguistic influences during that time.

Ola-leaf manuscripts, crafted from palm tree leaves, possess organic natural components that render them susceptible to damage over time. Hence, it is imperative to treat Ola-leaf manuscripts to halt any further deterioration promptly. The degradation of these manuscripts can be attributed to various well-known factors such as light, heat, moisture, fungi, insects, and air pollution.

The preservation and protection of Ola-leaf manuscripts are crucial for librarians, archivists, and curators and are responsible for transmitting invaluable information and wisdom to the coming generations. These manuscripts carry a substantial historical legacy,

and the current challenge pertains to the demanding and time-intensive process of safeguarding efforts. All of these efforts are geared towards guaranteeing future access and availability for the benefit of posterity.

While libraries and institutions have their respective policies on preserving and safeguarding Ola-leaf manuscripts, considerable variation exists among them (Navigation & Oshanithi, 2021). Regrettably, currently lacks a comprehensive mechanism for organising metadata about Ola-leaf manuscripts, hindering easy searching and sharing of bibliographical data at both local and international levels. Most of the Ola-leaf manuscript collections in Sri Lanka need more adequate records and organised procedures. The main objective of this study is to provide an overview of the challenges involved in cataloguing and facilitating access to Ola-leaf manuscripts, utilising existing standards. Machine Readable Cataloguing (MARC 21) format for bibliographic data is designed to be a carrier for bibliographic information about printed and manuscript textual materials, computer files, maps, music, continuing resources, visual materials, and mixed materials (Library of Congress, 2006).

Machine Readable Cataloguing Format – MARC 21

The MARC21 format encompasses ten basic information field blocks essential for describing and organising bibliographic data. These ten information field blocks in the MARC21 format form a comprehensive structure for organising bibliographic data. By utilising these standardised fields, librarians, archivists, and catalogers can effectively describe and provide access to a wide range of resources in various formats, enhancing the discoverability and accessibility of library collections.

1. 0XX - Control Information: This block includes tags for control information, numbers, and codes that provide additional details about the resource beyond the standard fields. It may capture material characteristics, language codes, and other metadata relevant to the resource.

2. 1XX - Main Entry: This block contains tags for recording main entry information, such as personal names (tag 100) and corporate names (tag 110) associated with the resource. These tags allow the identification of individuals or organisations responsible for the creation or intellectual content of the material.

3. 2XX - Titles, Edition, and Imprint: The titles, edition statements, and imprint details of the resource are captured in this block. The primary tag in this block is 245, which includes subfields to describe the main title, remainder of the title, statement of responsibility, and medium of the material.

4. 3XX - Physical Description: This block provides information about the physical characteristics of the resource, including extent (tag 300), dimensions, and other physical descriptions. It allows a clear understanding of the material's size, format, and physical attributes.

5. 4XX - Series Statements: Tags within this block record information about the series to which the resource belongs. This block enables the organisation and retrieval of related materials published in series.

6. 5XX - Notes: Various types of notes related to the resource are included in this block. These notes can provide general information, summaries, annotations, and other relevant details that enhance understanding and usage of the material.

7. 6XX - Subject Access Fields: This block focuses on subject access and includes tags for capturing subject terms (tag 650) and genre/form data (tag 655). It allows for assigning subject headings and genre/form terms to facilitate searching and retrieval of materials by specific subjects or genres.

8. 7XX - Name, Added Entries or Series; Linking: This block includes tags for additional names associated with the resource, such as collaborators, contributors, or other entities related to the materials. It also facilitates linking to related resources with additional names.

9. 8XX - Series Added Entries, Holdings, and Locations: Tags within this block capture information related to the resource's series-added entries, holdings, and locations. It allows for identifying specific editions or variations within a series and details where the resource can be found.

10. 9XX - Reserved for Local Implementation: This block is reserved for local use or implementation, allowing institutions to define and customise tags to meet their specific needs or requirements. It provides flexibility for adapting the MARC21 format to local cataloguing practices or additional data elements (Library of Congress, 2006).

These main blocks in the MARC21 format offer a standardised structure for organising and describing bibliographic data, facilitating consistent cataloguing practices, and efficiently retrieving information from library catalogues and databases. There need to be more specifically selected tags within the MARC21 format to describe Ola-leaf manuscripts in Sri Lanka accurately. According to the literature review, limited research has been conducted to develop suitable metadata for cataloguing these unique materials. Consequently, numerous collections need more records and organisational protocols. Hence, there is a pressing need to focus more on cataloguing and documenting OLA-leaf manuscripts.

Comprehensive metadata is necessary to search and share bibliographical data locally and internationally easily. This study aims to bridge the existing research gap by investigating and exploring the potential utilisation of MARC21 fields to describe Ola-leaf manuscripts. The objective is to enhance the cataloguing process, enabling effortless searching and retrieval of these manuscripts through library Online Public Access Catalogues (OPACs). By identifying and implementing suitable MARC21 fields, this research seeks to improve the accessibility and availability of Ola-leaf manuscripts for scholars, researchers, and the wider public.

Objectives

The primary objective of this study is to establish a standardised Machine Readable Cataloguing (MARC 21) format tailored explicitly for enhanced accessibility of Ola-Leaf manuscripts. Additionally, this research endeavours to create a comprehensive field selection guide to ensure consistency in the bibliographic records of Ola-leaf collections across various library catalogues.

Literature Review

In 2009, Gangabadadarachchi and Amarasiri conducted a study on the crucial role played by the National Library in collecting and preserving a nation's intellectual heritage. Their research underscores the growing significance of digitisation and digital libraries as responses to the changing landscape of libraries. The authors highlight the rapid deterioration of printed materials, making digitisation essential for safeguarding original copies and enabling reformatting for continued accessibility.

The National Library's proactive approach is evident in initiating a digital library project and acquiring primary reference materials in digital formats—furthermore, the library benefits from the Programme for the Enhancement of Research Information (PERI) project of the International Network for the Availability of Scientific Publications (INASP), which grants free access to e-journals. Gangabadadarachchi and Amarasiri noted that the National Library's bibliographic and documentation products are available in various formats, including print, digital, or exclusively digital. The transition to digital extends to the library's catalogue and National Union Catalogue, both computerised and accessible online. The authors also highlight the successful digitisation of the library's photographic collection. Notably, the library's document scanning project aims to provide global users access to digitised materials related to Sri Lanka. This paper offers comprehensive insights into the

National Library's proactive efforts in addressing the challenges of preservation and accessibility in the digital age.

The Maulana Azad Library at Aligarh Muslim University (AMU) is India's most extensive library system and Asia's second-largest. Within its extensive collections, the library boasts an impressive array of around 16,000 rare manuscripts, drawing the attention of researchers and visitors from around the globe. The institution has two dedicated conservation and preservation laboratories to safeguard and maintain these invaluable documents. This paper sheds light on the comprehensive measures and techniques adopted by the Maulana Azad Central Library of AMU to ensure the conservation and preservation of its rare treasures. Hence, the paper explores the library's strategies for upholding its repository of manuscripts, securing their accessibility for generations to come. The paper delves into the library's hardware and software resources for digitising its collection. The discussion encompasses the library's utilisation of these tools, outlining their pivotal role in digitally preserving precious materials. This paper is a valuable resource for individuals interested in conserving and preserving similar materials. Its insights into the library's techniques, strategies, and digital methodologies provide a practical and informative guide for those engaged in related fields (Hasan et al., 2016).

Jyotshna (2016) engages in "A selective review of scholarly communications on palm leaf manuscripts, library philosophy, and practice" to meticulously examine the literature encompassing diverse facets of palm leaf manuscripts. The central objective of this study is to meticulously analyse the literature concerning various dimensions of palm leaf manuscripts. Through this comprehensive review, the intention is to shed light on several critical aspects of these manuscripts. The paper explores the historical significance of palm leaf manuscripts, elucidating their preparation's intricate processes, including seasoning and inscription upon the leaves. In addition, it delves into a thorough examination of the multifaceted factors contributing to their physical, chemical, and biological deterioration.

The analysis further extends to explore the methodologies utilised for the classification and cataloguing of these manuscripts. Moreover, the study critically evaluates a spectrum of both traditional and contemporary preservation and conservation techniques applied to palm leaf manuscripts. A significant emphasis is placed on the evolving landscape of digital preservation, examining its feasibility and potential applicability to the manuscripts. This entails investigating the endeavours undertaken by various manuscript libraries to pursue digitization.

The study by Gnanasekaran (2017) comprehensively explores the progressive advancements and methodologies employed in digitizing palm leaf manuscripts on a global scale. These manuscripts, representing the cultural heritage of previous eras, present a formidable challenge in terms of preservation and transference to future generations. Against this backdrop, the article addresses the pressing need to comprehend the evolutionary trajectory of digitization practices applied to palm leaf manuscripts, as illuminated within the existing literature. This understanding is pivotal in directing attention toward anticipated requirements and emerging trends in enhancing palm-leaf manuscript digitization endeavours. The paper sequentially charts the historical evolution of strategies employed to conserve palm-leaf manuscripts through digitization. Throughout this analysis, a pronounced level of zeal among librarians towards digitizing palm-leaf manuscripts becomes evident. This fervour is spurred by the imminent risk faced by these collections across the globe, thereby highlighting the urgency and significance of their digitization for future scholarly engagement.

Navigation and Oshanithi (2021). "Preservation challenges and barriers in documenting and digitizing palm leaf manuscripts: A case study from Eastern Sri Lanka." The palm leaf manuscripts stand as vital repositories of our cultural heritage, offering insights into the wisdom of our forebears. It is imperative for librarians, archivists, and curators to safeguard and conserve these artifacts, ensuring seamless knowledge transfer to successive generations. These manuscripts represent a reservoir of historical documentation. Hence, preserving, conserving, and making them accessible on time poses considerable challenges in the present context. Sri Lanka's rich historical legacy is embodied in its valuable palm-leaf collections, with many in personal holdings across the eastern regions. Numerous nations around the globe have embarked on dedicated preservation efforts to secure these invaluable manuscripts for posterity. Among the strategies utilized, digitization is a potent method to protect these vulnerable documents. The adoption of digitization techniques becomes crucial in light of the evident endangerment of palm-leaf manuscripts and the obstacles encountered during their collection and documentation. As such, the study endeavours to ascertain the applicability of digitization methods in preserving palm-leaf manuscripts. In this context, the study explores the challenges and barriers intrinsic to collecting, documenting, and digitizing palm leaf collections in Eastern Sri Lanka. Through this focused investigation, Navigation and Oshanithi (2021) strive to identify solutions to surmount the obstacles faced during the documentation and digitization endeavours.

Methodology

This research employed a mixed research method approach. The population for the study encompassed all the available Ola-leaf libraries in Sri Lanka, and a sample was selected using the maximum variance (heterogeneous) sampling method under the purposive sampling technique. Consequently, the Sri Lanka National Library and Documentation Service Board and the Ola-Leaf Study and Research Library of the University of Kelaniya were chosen as the selected libraries based on this sampling method. Different data collection methods were employed, such as interviews, questionnaires, observational techniques, and library web surveys to gather data about the nature of the metadata of the Ola-leaf manuscripts. Researchers planned to separate the specific fields and subfields within Ola-leaf manuscripts to make informed selections of appropriate MARC tags. Furthermore, the study thoroughly examined potential access points or headings for Ola-leaf manuscripts, considering their unique nature, which sets them apart from traditional monographs and other non-book materials.

Initially, researchers conducted a manual collection of data regarding the characteristics of Ola-leaf manuscripts. Through this process, we identified relevant fields and subfields that could be effectively incorporated into the MARC format tailored for Ola-leaf manuscripts. Primarily, the focus was on recognizing and utilizing fundamental metadata fields inherent to Ola-leaf manuscripts.

Results and Discussion

The study's findings indicate that the management and documentation of Ola-leaf manuscripts in the sampled libraries must be revised. The research identified several challenges in cataloguing and providing access to Ola-leaf manuscripts. Some libraries have resorted to self-development methods to address these challenges, while library professionals have yet to be actively involved in Ola-leaf cataloguing endeavours. As a result, the researchers propose adopting and implementing a MARC21 format specifically designed for enhanced cataloguing and accessibility of Ola-leaf manuscripts. The study recommends that libraries, archives, and cultural institutions embrace this extension to improve the cataloguing and accessibility of these invaluable cultural artifacts. MARC21 fields (tags) in Table 1 were selected for describing Ola-leaf manuscripts.

Table 1: 0XX - Control Information of the Ola-leaf Manuscripts

Tag	Sub Fields	Designation	(NR/R)	Example/Remarks
006		Additional Material Characteristics	(R)	006$tsin (*i.e., the manuscript is written in Sinhala*)
	$t	Manuscript Language Material	(R)	
041		Language Code	(R)	041$asin$bsin $hpali (*i.e., the language code of the text and summary is in Sinhala, Manuscript is written in Pali*)
	$a	Language Code of Text	(R)	
	$b	Language code of summary or abstract	(R)	
	$h	The language code of the original	(R)	

Note: Developed by Authors (2023)

For several reasons, the selection and proper utilization of the 000 fields in the MARC21 format for the Ola-leaf manuscript description are of utmost importance. Including relevant information in the 000 fields of MARC21 for Ola-leaf manuscript description offers multiple benefits, such as aiding in record identification, displaying record type and bibliographic levels, indicating the cataloguing form of material, and specifying the encoding levels used. Table 1 shows the chosen control information number codes for Ola-leaf manuscripts. Tag 006 has been selected to describe additional material characteristics, providing detailed information beyond the standard fields. Conversely, tag 041 has been chosen to accurately depict the language(s) used in the Ola-Leaf manuscripts, ensuring comprehensive language representation in the cataloguing process.

The selection of 1XX fields in MARC21 facilitates main entry identification, ensures name authority control, enables contributor identification, and allows for the creation of alternative and variant names. Table 2 presents the main heading tags chosen for Ola-leaf manuscripts by this research. Since Ola-leaf manuscripts are not treated as monographs and

often lack proper authorship attribution, tag 100 for the main entry-personal name and tag 110 for the main entry-corporate name have been selected to appropriately represent the entities associated with the manuscripts.

Table 2: 1XX - Main Entry

Tag	Sub Fields	Designation	(NR/R)	Example/Remarks
100		Main Entry – Personal Name	(NR)	100$aGutthila (*i.e. the author of the manuscript is Gutthila)*
	$a	Personal Name	(NR)	
110		Main Entry – Corporate Name	(NR)	110$aVidyananda Privena *(i.e. the corporate author of the manuscript is Vidyalankarapirivena)*
	$a	Corporate Name	(NR)	

Note: Developed by Authors (2023)

The 2XX fields in MARC21 offer a comprehensive range of valuable information for Ola-leaf manuscript description, encompassing title details, title authority control, statements of responsibility, edition-related information, publication and distribution details, and physical description attributes. These fields are crucial in accurately representing the manuscript's content, origin, and physical characteristics while ensuring consistency, accessibility, and enhanced understanding for users and researchers. In this study, the researchers propose the utilization of the 245 tags along with four subfields to comprehensively describe the title of the material. These subfields include the main title ($a), remainder of title ($b), statement of responsibility ($c), and medium of the material ($h). For further details, please refer to Table 3.

Table 3: 2XX - Title and Title Related Field

Tag	Sub Fields	Designation	NR/R	Example/Remark
245		Title and Statement of Responsibility	(NR)	**245$a**Kosala bimbivarnanawa/ $bRev.Rahula**$h**[Ola leaf] (*i.e. title of the manuscript is Kosala bimbavarnanawa and the author is Rev. Rahula. Medium is Ola leaf)*
	$a	Title	(NR)	
	$b	Reminder of Title	(NR)	
	$c	Statement of Responsibility	(NR)	
	$h	Medium	(NR)	

Note: Developed by Authors (2023)

Table 4 outlines the selected tags for describing the physical characteristics of Ola-leaf manuscripts. Three subfields have been identified for this purpose. The tag 300 subfield $a is used to specify the manuscript's extent or number of leaves. Additional physical descriptions can be included using the subfield $b. Furthermore, dimensions can be determined using the subfield $c within the tag 300.

Table 4: 3XX – Physical Description

Tag	Sub Fields	Designation	NR/R	Example/ Remarks
300		Physical Description	(R)	300$aLeaves21 ;$c21·5cm (*i.e., the manuscript has 21 leaves 21 cm in length*)
	$a	Extent	(R)	
	$b	Other Physical Description	(NR)	
	$c	Dimensions (R)	(R)	

Note: Developed by Authors (2023)

The Ola-leaf manuscripts typically do not use the Sinhala language. Hence, it is crucial to provide a concise summary of their contents. To achieve this, we have incorporated two tags: general notes (Tag 500 $a) and summary notes (520 $a), as illustrated in Table 5 below. These notes effectively present a comprehensive overview of the Ola-leaf manuscripts, enabling a clear understanding of their nature and content.

Table 5: 5XX - Notes

Tag	Sub Fields	Designation	(NR/R)	Example
500		General Note	(R)	500$a The Ola-leaf manuscript commends *Kosala Bibba*, and it begins with the Pali phrase, "*Akarang eka mekanva –Buddha rupasamansiya*," which translates to "One character resembles the form of the Buddha statue." *(i.e. it gives brief details about the manuscript*)
	$a	General Note	(NR)	
520		Summary	(R)	520$aKing Kosala and his entourage journeyed to Sawath-Nuwara to visit the Buddha. They arrived at Jethawanarama with great anticipation, only to find that the Buddha was not there. Feeling disheartened, King Kosala approached the Buddha the following day and recounted the incident. (*i.e. 520 provides a summary of the manuscript*)
	$a	Summary, etc. Note	(NR)	

Note: Developed by Authors (2023)

The ability to search by subject is a fundamental feature for users. Two tags have been chosen for the format to facilitate this, as shown in Table 6. Tag 650$a "subject added entry" and 655$a "genre form" have been selected. Both tags are repeatable, allowing librarians to include all relevant subject terms associated with the Ola-leaf manuscripts. It ensures that users can conduct thorough and comprehensive searches based on various subjects related to the Ola-leaves.

Table 6: 6XX – Subject Added Entry

Tag	Sub Fields	Designation	(NR/R)	Example
650		Subject Added Entry	(R)	650$aIntangible medicine (*i.e., the subject of the manuscript is intangible medicine*)
	$a	Topical Subject Term	(NR)	
655		Genre Form	(R)	655$aMedicine *i.e., the keyword of the manuscript is medicine*)
	$a	Genre / Form data or focus term	(NR)	

Note: Developed by Authors (2023)

Researchers have chosen a set of ten tags to encompass the description of Ola-leaf manuscripts, as explained earlier. A sample of a comprehensive MARC21 record created for an Ola-leaf manuscript is presented in Figure 1

006 $tsin

041 $a**sin**$bsin**$h**pali

100 $a Gutthila

110 $a Vidyananda Privena

245 $a Kosala bimbi varnanawa/ **$b**Guttiila **$h**[Ola leaf]

300 $a Leaves 21**;$c**21·5cm

500 $a The Ola-leaf manuscript commends *Kosala Bibba*, and it begins with the Pali phrase, "*Akarang eka mekanva –Buddha rupa samansiya*," which translates to "One character resembles the form of the Buddha statue."

520 $a King Kosala and his entourage journeyed to Sawath-Nuwara to visit the Buddha. They arrived at Jethawanarama with great anticipation, only to find that the Buddha was not there. Feeling disheartened, King Kosala approached the Buddha the following day and recounted the incident.

650 $a Sinhala literature

655 $aliterature

Figure 1: MARC Record for *Kosala Bimbivarnanawa* Ola-leaf Manuscript

Conclusion and Recommendations

In conclusion, Ola-leaf manuscripts in Sri Lanka are invaluable treasures that encapsulate the region's rich cultural heritage, historical narratives, and ancestral wisdom. The Mahindagamanaya event represents a pivotal moment when the practice of writing gained prominence, and institutions like the Aluviharaya played a pivotal role in safeguarding the Tripitaka. These manuscripts encompass a wide range of subjects and are composed in numerous languages, reflecting the linguistic diversity of their time. Nevertheless, the preservation of these priceless artifacts is beset by challenges owing to their organic nature and vulnerability to deterioration over time.

The study highlights the inadequate management and documentation of Ola-leaf manuscripts in Sri Lankan libraries. To address these challenges, the researchers propose adopting a standardised Machine Readable Cataloguing (MARC 21) format designed clearly for Ola-leaf manuscripts. This format enhances the cataloguing and accessibility of Ola-leaf manuscripts, facilitating easy searching and retrieval through library Online Public Access Catalogues. The study identifies several MARC21 fields to describe Ola-leaf manuscripts,

including control information number codes, main entries, title and title-related fields, physical descriptions, and notes.

The selected MARC21 fields and tags, as outlined in Tables 1 through 6, provide a systematic and detailed approach to describing Ola-leaf manuscripts. From control information to main entries, title and title-related fields, physical descriptions, and informative notes, this format addresses the multifaceted aspects of these manuscripts. Notably, incorporating language codes, main entries for personal and corporate names, and subject indexing ensures users can navigate and discover Ola-leaf manuscripts effectively.

Ultimately, this research encourages libraries, archives, and cultural institutions to embrace this MARC21 extension to improve the documentation and accessibility of Ola-leaf manuscripts, preserving and promoting these valuable cultural heritage materials for generations to come. The sample MARC21 record presented in this discussion serves as a practical demonstration of how this format can be employed to create comprehensive cataloguing records for Ola-leaf manuscripts, enriching the scholarly and cultural landscape.

Overall, this research sheds light on the challenges in cataloguing and providing access to Ola-leaf manuscripts and provides a roadmap for improving their preservation and dissemination. By standardizing cataloguing practices and utilizing the MARC21 format, the valuable cultural artifacts contained within Ola-leaf manuscripts can be effectively preserved and made accessible for the benefit of present and future generations.

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CHILDREN'S SCHOOL ONLINE EDUCATION: ASSESSING PARENTAL SATISFACTION AND EXPERIENCES IN SUPPORTING CHILDREN'S ONLINE EDUCATION IN THE SOUTHERN PROVINCE

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Abstract

Online education activities, which came to the fore in Sri Lanka with the global pandemic of COVID-19, are now playing a significant role in the whole educational system. This study assessed parental satisfaction and experiences supporting children's online education in the Southern Province. This study used a case study approach to examine 300 parents in the Southern Province. The research involved self-reported questionnaires with three sections. The first section collected demographic information, the second assessed parental satisfaction with their online education support skills, and the third evaluated information literacy related to technology and online resources. Data analysis was performed using SPSS software, employing descriptive statistics to estimate parental digital skills and satisfaction and Chi-square tests to explore the relationship between parental satisfaction, gender, and education level. The study tested seven hypotheses, including the impact of various parental skills on overall satisfaction with their children's online education. The study found that parents generally feel delighted with their children's online educational activities. However, regarding parents' information literacy regarding children's online educational activities, the ability to locate is optimal, but evaluating and using effectively is insufficient. Parents' operational and communication skills were found to have a strong positive impact on their satisfaction with their level of ability to assist their children's online education. The top three challenges that parents experience are: a lack of stable and high-speed internet coverage; obtaining technical support; and a language barrier. Parents' digital skills in online education activities improve children's ethical use of online education. Parents need to be aware of cybercrime and cybergaming to make ethical usage of online education a reality. As a result, it is a timely societal obligation to address the discovered gaps in parental digital literacy and information literacy and solve the stated challenges to keep children's online education activities on track.

Keywords*: Parental digital literacy, Online education, Children's education, School education*

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Introduction

As the COVID-19 virus spread worldwide, nations made emergency steps to stop the infection's transmission by resuming local or national lockdowns. There, the temporary closing of public places including schools, universities, and tutoring classes, was prominent. The importance of face-to-face education in developing countries, as well as the challenges that they encounter with distance-learning approaches, is massive (Tadesse & Muluye, 2020). However, the circumstances of the viral pandemic provided an opportunity to open new directions for global education.

After the initial closure in March 2020 at the onset of the pandemic, all schools and tutoring classes in Sri Lanka fully resumed in January 2022. The disruption of academic activities not only impacts students' education but also their psychological well-being. In response, educational authorities and teachers collaborated to introduce home-based learning using advanced online learning models and application software to mitigate the impact on students' educational pursuits. Nevertheless, the availability of online education does not imply a lack of challenges and influences.

The switch from traditional (face-to-face) education to online learning has had an impact on families' everyday activities in addition to students' education. Adapting to a changing educational system is significant not only for children and teachers but also for parents. The continuing development of online education has given parents a new perspective on their children's education and learning. When transitioning to the online learning model, parents bear the primary responsibility of furnishing financial resources, offering technical support, guidance and creating a conducive environment. In addition to parents' commitment and support for their children's online education, their digital literacy and information literacy skills should also be proficient

Numerous studies have been conducted on online education, focusing on its advantages and challenges. The COVID-19 pandemic and associated lockdowns have significantly increased interest in this area of research. However, most of these studies focus on the perspectives of students and teachers in the learning and teaching process. Even after the pandemic had been eliminated, Sri Lanka's online learning models kept going and individuals have become accustomed to using them more frequently. As a result, parents have made some effort to gather the required funds and technology to facilitate the online learning approach. The question of whether parents possess advanced digital skills that enable their children to adapt to the new online learning approach is of significant concern. Assessing the adequacy of parents' digital literacy in the context of their children's online education is

crucial. This prompts a timely investigation into how online education has influenced parents' digital skills. Such research will address a notable gap in the literature, particularly in regions like the Southern Province of Sri Lanka, where there has been limited exploration of parental behaviour regarding their children's online education.

Objectives

This study aims to investigate how parents' digital literacy skills impact the effectiveness of the online education approach for school-age children. The specific objectives are as follows:

1. Determine the association between parents' skills and parental satisfaction with their support of the children's online learning.
2. Identifying the problems faced by the parents during the children's online studies.

Literature Review

The COVID-19 pandemic impacted over 1.5 billion children and while schools have largely reopened globally, the education sector is still in the process of recovery. This involves assessing the extent of the damage incurred and extracting valuable lessons from the experience. (UNESCO, n.d.). The global pandemic has caused large-scale disruptions to the continuation of structured schooling for approximately 4.2 million students and 235,000 teachers in Sri Lanka (UNICEF, 2021). Because of this situation, there are disparities in learning inside and between countries (Azevedo et al., 2022). Hence, there is a need to address both school and family factors to reduce the impact of learning gaps between social groups (González & Bonal, 2021). Online education, which previously had been minimally utilized, presented an opportunity for the authorities' efforts to reduce that impact.

Post-COVID situations have opened many opportunities and challenges in the education world (Sunil & Srilakshminarayana, 2022). Simultaneously, online education is gaining significance in lots of countries. Many researchers have discussed the benefits of online education (Riasati et al., 2012; Xia et al., 2013; Wang et al., 2019) and researchers have taken the initiative to identify the challenges faced by parents in online education (Bhamani et al., 2020; Dong et al., 2020; Agaton & Cueto, 2021). Furthermore, from the perspective of parents, online education leads to enhancing self-regulated learning skills and digital sociability in their children (Misirli & Ergulec, 2021). On the other hand, Hurlbut (2018), Hong et al. (2020) and Engzell et al. (2021) emphasize the inadequacy of student progress in online education. However, there has been a significant increase in children's

Internet, social networking, chat and online gaming activities to go along with an increase in online academic activities (Siste et al., 2020). According to the UNESCO case study report, despite varying levels of access to extensive infrastructure in Sri Lanka, problems in providing uniform distance learning methods across the country and disparities in participation were identified, while teachers were not adequately trained, which was identified as a positive in teachers adapting to distance learning methods quickly (UNICEF, 2021). Regardless, all the studies point in the optimistic direction of online education as a potential opportunity.

To realize the benefits of online learning systems, stakeholders such as students and teachers, as well as parents, must be equally involved. Due to the convenience and flexibility it provides from the students' perspective, online learning has become more popular (Singh et al., 2012). Positive experiences related to students' self-efficacy beliefs related to online learning (Lobos et al., 2022). When learning online, students gain from simple ways to ask questions, get answers etc. (Hollister et al., 2022). Students are quick to adapt to online education because of features including an attractive environment, multimedia presentations, recording and reuse ability. From the teachers' perspective, although teachers have positive perceptions of the usefulness and ease of use of online education, there are attitudinal problems regarding its effectiveness and use (Rahayu & Wirza, 2020). Teacher's perception of the biggest challenge for online classes is technological and network challenges (Priyadarshani & Jesuiya, 2021). Therefore, they need technical support and training in the use of online tools (Elfirdoussi et al., 2020). However, parents, the third party involved in the online education process, also have a part to play. However, parents are concerned about their children's workload and increasing screen time as a result of online education (Gupta et al., 2022). Parents are satisfied with the length of online learning and the number of assignments (Lau et al., 2021). Furthermore, parents feel very satisfied with their children's online studies in primary education (Deepthi Kumari & Jayathilaka, 2022). For online learning to be used effectively, the satisfaction and dedication of the three parties mentioned are essential.

Information literacy is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information" (American Library Association, 1989). Furthermore, information literacy is a lifelong need to be informed and up-to-date. Parental literacy has a significant impact on a child's later educational achievement (Harju-Luukkainen et al., 2020). Indeed, the low digital literacy of parents affects the lack of parental support in their children's online education (Rasmitadila et al., 2020). We strongly believe that parents should have excellent information

literacy skills as well as digital skills, particularly in online learning environments where children are exposed to technology and wider society.

Methodology

This study utilized the case study method and 300 parents of children studying in schools in the Southern Province were randomly selected as respondents. Only primary data were used in this study. It used self-report tools consisting of a socio-demographic details. Questionnaire consisted of three sections. The questionnaire was checked by one of the academic librarians that was utilized for collecting the data. Section one was to collect demographic information of the parents, including parental gender (Male/Female), age and educational qualification.

A self-report scale was used to measure parental satisfaction with their level of skills to support kids' online education, which consists of six items, including "Satisfaction on operational skills with online related devices and online platforms used", "Communication skills with online platforms", "Troubleshooting skills during online classes", "Learning skills on new technologies", "Teaching skills to assist their kids" and the sixth question was devoted to exploring the "Overall satisfaction of parents towards online education" in Section Two.

In Section Three of the questionnaire, parents were questioned about the ability to locate, ability to evaluate, and ability to use effectively information literacy domains through the knowledge of information and communication technology equipment (ICT) and tools, online education resources, cybercrime, cybergaming, and social media. A descriptive research method was used for presenting the data.

To discover factors associated with parents' online education-related digital literacy, hypothesis testing was used. Children's online study would be influenced by their parents' digital literacy in online education. As a result, we predicted that parents' digital literacy levels would be related to their satisfaction with their level of skills to support their children's online learning activities.

The collected data from 5-point Likert scale answers were entered and analyzed using SPSS (Statistical Package for Social Sciences) software. Descriptive statistics were used to estimate the parental digital skills and satisfaction with online education. Inferential statistics, a Chi-square test, was used to find the relationship between parents' overall satisfaction with their level of skills to support their kids' online education, the gender of the parents, and the educational level of the parents.

The following hypotheses were developed to test:

H1: Parents' Operational Skills make an impact on parents' overall satisfaction with their kids' online education

H2: Parents' Communication Skills make an impact on parents' overall satisfaction with their kids' online education

H3: Parents' Troubleshooting Skills make an impact on parents' overall satisfaction with their kids' online education

H4: Parents' Learning Skills makes an impact on parents' overall satisfaction with their kids' online education

H5: Parents' Teaching Skills make an impact on parents' overall satisfaction with their kids' online education

H6: Parent's gender makes an impact on parents' overall satisfaction with their kids' online education

H7: Parent's education level makes an impact on parents' overall satisfaction with their kids' online education

Results

There were 62.67% (188) female and 37.33% (112) male respondents to the questionnaire. Among them, 14.67% (44) were above 60 years of age, 61.67% (185) were 40 to 60 years of age and 23.67% (71) were beyond 40 years of age. Their achieved education levels on graduation or higher were 22.33% (67), passed the G.C.E. (A/L) examination at 50.33% (151), passed the G.C.E. (O/L) examination at 19.67% (59) and below the G.C.E. (O/L) examination at 7.67% (23). Figure 1 shows the mean values of parental information literacy levels for each child's activity related to online education.

The mean of the ability to locate the overall online activity results was displayed between 'excellent' and 'good'. However, the ability to evaluate and use effective results was displayed as less than 'average'. Furthermore, literacy in cybercrime and cybergaming was less than 'average '. This result indicated that there are different levels of parental information literacy, both positive and negative.

The study used a scale with five theoretical dimensions derived from the results of two previous studies (Jimoyiannis, 2015; Vodă et al., 2022). Table 1 presents the association between parental satisfaction and their digital literacy skills. A Chi-square Test was performed to identify the association of independent variables (Operational Skills, Communication Skills, Troubleshooting Skills, Learning Skills and Teaching Skills) with the

dependent variable (Parental Satisfaction). Based on Table 1 values of acceptance of the hypothesis or rejection of the hypothesis were decided. When the Sig. (2-tailed) value is less than 0.05, the hypothesis was accepted.

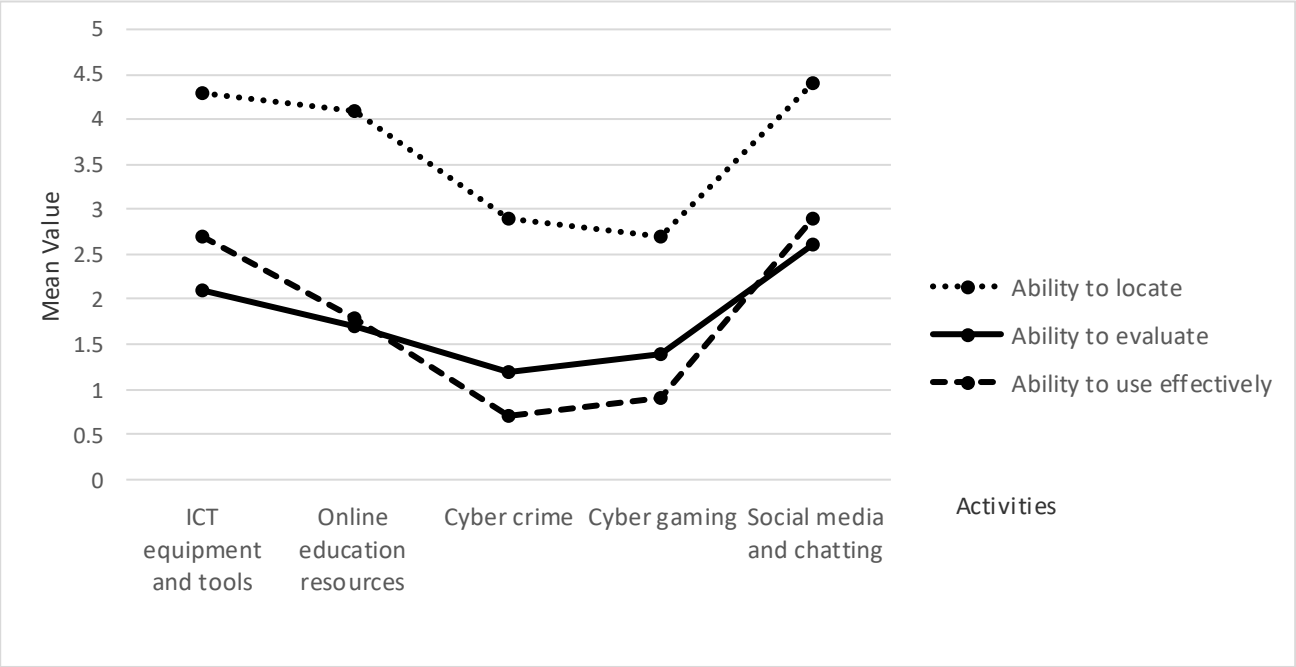

Figure 1: Distribution of the Mean Values of Parental Information Literacy Levels for each Children's Activities

Table 1: Chi-square Test Results for Finding Association between Parental Satisfaction and their Digital Literacy Skills

Parental Satisfaction * Digital Literacy Skills Crosstabulation					
	Operational Skills	Communication Skills	Troubleshooting Skills	Learning Skills	Teaching Skills
Chi-square value	301.433*	323.231*	61.509*	130.972*	85.226*
Degrees of freedom	16	16	12	16	16
Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000
N	300	300	300	300	300
*The significance level is 0.05 (2-tailed).					

Table 2 shows the association between parental satisfaction and their demographic information. According to Tables 1 and 2, except for the educational level of the parents, gender and all mentioned digital skills were statistically associated with Parental Satisfaction on their children's online education. That means, all the hypotheses were accepted and there was no significant difference or association between Parental Satisfaction and the Educational Levels of Parents. All digital skills made significant impacts on Parental Satisfaction on their children's online education individually.

Table 2: Chi-square Test Results for Finding Association between Parental Satisfaction and their Characteristics.

Parental Satisfaction * their Characteristics Crosstabulation		
	Gender	Education Level
Chi-square value	17.928**	16.724**
Degrees of freedom	4	12
Sig. (2-sided)	0.001	0.160
N	300	300
**The significance level is 0.05 (2-tailed).		

Table 3: Parental Overall Satisfaction with their Children's Online Education (n=300)

		Frequency	Percent	Valid Percent
Valid	Poor	10	3.3	3.3
	Fair	27	8.9	9.0
	Good	65	21.3	21.7
	Very good	112	36.7	37.3
	Excellent	86	28.2	28.7
	Total	300	98.4	100.0
Missing	System	5	1.6	
Total		305	100.0	

Table 3 indicates that a significant proportion of parents expressed varying levels of satisfaction regarding their ability to support their children's online education. Specifically, 37.3% of parents reported being very satisfied, while 28.7% expressed excellent satisfaction.

Additionally, 21.7% of parents reported feeling good satisfaction with their skills to support their kids' online education. On the other hand, 9% of parents expressed a fair level of satisfaction, and 3.3% reported poor satisfaction with their skills to support their children's online education.

Table 4 reveals most parents (91%) claimed they had to rely on relatives, coworkers or other persons who were computer literate to help or accompany their children to an online lesson since they lacked the necessary technological skills. As Internet access is the primary necessity for online learning, it is hoped that children will be able to fully engage in online learning with adequate Internet access. However, 89% of parents reported that they had problems maintaining a steady high-speed internet connection as the second-highest percentage of parents. The third-highest percentage of parents, 84% of parents reported that their language barrier is a major issue. As a result, they were unable to grasp messages from teachers and the conversations that their children were having with their peers.

Table 4: Challenges Faced by Parents in Online Learning Ecosystem (n=300)

Problems Encountered by Parents	**N**	**%**
Difficulty obtaining technical support	273	91
A lack of stable high-speed internet coverage	267	89
A language barrier	252	84
Difficulty managing home duties and teaching responsibilities	237	79
the child is not attentive during online classes	210	70
the home environment is not comfortable for learning	189	63
Understanding lessons via online education is a challenge for their child.	177	59
their kids struggled to adjust to online classes	144	48

Discussion

It is not enough for parents to be committed to their children's studying online; parents' awareness is equally essential. Parents must be adaptable to the children and those activities as well as satisfied with their children's online educational activities. Parents should be ICT literate to accomplish that. The level of parents' satisfaction with their level of skills to support children's online educational activities was 3.79, which is displayed between 'neutral' and 'satisfied'. It has been highlighted here as a significant factor. However, it will be

accepted that parental concern and involvement in their children's online education are at a moderate level.

When it comes to parents' digital literacy about their children's online educational activities, their ability to locate information remains optimal. There, too, parents have sufficient knowledge of ICT equipment and tools, online education resources, social media, and chatting. However, a lack of parents' awareness of cybercrime and cybergaming allows children to misuse online education. This means that effective evaluation and utilization of information are not optimal. This result indicates that, even though it is possible to find online information sources that can be used for the identified information need, it is not sufficient to be able to choose the best ones. To that end, with the digital generation gap, it is vital to emphasize that the approach of relying on family for assistance in areas of communication technology appears to be becoming increasingly common. Parents who had less experience with new technology sometimes looked to their siblings, especially those who had children older than their own, for advice on how to deal with this digital generation gap. They frequently depended on older, more computer-proficient relatives or cousins to keep an eye on their children. When a technology issue developed, they turned to their children for answers. (Clark, 2009) It's not entirely awful, but they should be ICT literate to achieve that. Many scholars have discovered an association between literacy and educational attainment. Indeed, there was a significant association between parental satisfaction and operational skills, communication skills, learning skills, teaching skills, and troubleshooting skills individually. Parents' usage of social media and mobile devices has more of an impact on children's online educational activities than their educational skills in terms of locating information.

However, learning and teaching abilities must be improved to maximize parents' capacity for knowledge evaluation and effective information use. We believe that holding information literacy education seminars and workshops for parents is not the solution. On a scenario basis, we recommend small group programs at the school level and information specialist help and mentoring programs, especially about cybercrime and cybergaming. The improvement of Troubleshooting Skills, which was a key issue we examined in the study, will surely be a further challenge in the future. Because, in an instance where existing technology knowledge cannot be covered, gaining new technology and related equipment troubleshooting skills that are updated daily is necessary to outperform their intelligence level. They will need the assistance of a technical professional for this. In our study, the top three problems faced by parents during their children's online education are identified as the

main challenges that parents address are a lack of stable high-speed internet coverage, difficulty obtaining technical support, and a language barrier. Parents must overcome the challenges posed by current situations to maintain the best environment for their children's online education.

Conclusion

Parental digital literacy is very important because their children's online learning activities require parental supervision to keep them running smoothly. Furthermore, parents' skills in online education activities encourage children's ethical usage of online education. As a result, parents' capacity to assess information and apply it effectively needs to be improved to keep children's online education activities moving in a positive direction. Additionally, parents require some assistance to improve their teaching, learning, and troubleshooting skills. However, parents' satisfaction with their children's online learning activities and their capacity for information discovery have a significant role in how well their children learn online. Further strengthening it, filling gaps and overcoming the challenges we have discovered would allow parents to eliminate the drawbacks of online education while providing beneficial advantages to their children.

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A COMPARATIVE STUDY OF LIBRARY CLASSIFICATION NUMBERS ASSIGNMENT ACCURACY: OPENAI LANGUAGE MODELS VS. HUMAN CLASSIFIERS

S. K. Illangarathne[1]

Abstract

This study examines the accuracy and feasibility of using OpenAI language models for assigning Dewey Decimal Classification (DDC) numbers in libraries. The primary objective was to compare their performance with that of human classifiers in accurately assigning DDC numbers. A sample of 30 books from various disciplines was used and the DDC numbers assigned by human classifiers serve as a benchmark tallying with the Online Catalogue of Library of Congress (OCLC Classify). The books were then presented to the linguaGPT language model for automated classification numbers. Statistical measures, such as precision, recall, and F1 score were used to evaluate the model's accuracy. The findings indicated that Open-AI language models demonstrate a moderate level of accuracy, with precision, recall, and F1 score of 0.53 (53%), suggesting they achieve moderate performance in correctly identifying positive instances and overall prediction accuracy. However, the model's performance varies depending on the complexity and specificity of the materials being classified. In comparison, human classifiers consistently achieve accurate classification, drawing on their expertise and contextual understanding. Recommendations from this study include: validating classification with reliable sources, seeking subject-matter expertise, regularly reviewing and updating the classification system and exploring hybrid AI-human systems. Implementing these recommendations can enhance the accuracy and reliability of library classification systems, facilitating improved access to information for users. In conclusion, OpenAI language models show promise in library classification, but improvements are needed to ensure greater accuracy.

Keywords: *Library classification, Number assignment accuracy, OpenAI language models, Human classifier, DDC*

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Introduction

The process of assigning accurate and consistent class numbers to books is a crucial aspect of library cataloguing systems. Traditionally, this task has been performed by human classifiers who possess expertise in Library and Information Science (LIS) and Classification Systems (CS) like the Dewey Decimal Classification (DDC) which is used in more than 135 countries and has been translated into over 30 languages (Comaromi, 1976; Liu, 1996). However, recent advancements in Natural Language Processing (NLP), specifically Open Artificial Intelligence (OpenAI) language models, have opened up possibilities for automated classification. Many researchers have indeed conducted numerous studies on OpenAI and its potential applicability to human activities. These studies have explored a wide range of topics, such as natural language processing, machine learning, computer vision, and reinforcement learning. Researchers have investigated the feasibility of using OpenAI models for tasks like language generation, translation, summarization, image recognition, automating and even game-playing (Gamage & Wanigasooriya, 2023).

Despite the potential benefits of using OpenAI language models for assigning DDC class numbers; there is a gap in research evaluating their accuracy and feasibility compared to human classifiers. This study aimed to fill that gap by conducting a comparative analysis of the class numbers generated by linguaGTP an OpenAI language model with those assigned by human classifiers in a real-world library context.

The significance of this research lies in its potential to revolutionize the process of assigning DDC class numbers in libraries. If proven to be accurate and reliable, OpenAI language models could present an efficient and cost-effective alternative to human classifiers. This could significantly streamline the cataloguing process, reduce human labour and improve the accessibility and discoverability of library resources.

By evaluating the performance of OpenAI language models against human classifiers, this study will provide empirical evidence regarding the capabilities, limitations and potential use of automated classification systems. The findings of this research will not only inform librarians and catalogers but also contribute to the broader discourse on the application of artificial intelligence in the field of library and information science.

Ultimately, this study aims to bridge the gap in knowledge by identifying whether OpenAI language models can be effectively integrated into library cataloguing processes, thereby creating opportunities for increased efficiency and accuracy in DDC class number assignment.

Objectives

The primary objective of this study was to assess the accuracy and feasibility of utilizing OpenAI language models for assigning Dewey Decimal Classification numbers in libraries.

Methodology

To obtain a representative sample, several University Library Online Public Access Catalogs (OPACs) were searched and crosschecked with OCLC Classify (https://classify.oclc.org/classify2/) for consistency and a total of 30 books written in the English language were randomly chosen from various disciplines. By analyzing the variations of the class numbers given by the individual classifiers and based on the authors' subject knowledge, assigned the idlest DDC class numbers for every book as human side output. After that, every above title was presented to a linguaGPT (Generative Pre-trained Transformer) version 4.0 for automated classification. Then model-generated DDC class numbers were compared with those assigned by human classifiers and tested their similarity and accuracy using statistical methods, such as precision, recall, and F1 score which were prominently used to evaluate the performance and reliability of the OpenAI language models in comparison to the human knowledge-based evaluations (Yacouby & Axman, 2020). Despite the various limitations associated with the evaluation methods mentioned above and the presence of unforeseen complexities throughout the entire process, the results were ultimately presented in a tabular format, accommodating these challenges.

The following formulas were used for precision, recall, and F1 score:

Precision: Precision measures the proportion of correctly identified instances in the predicted positive class.

Formula: Precision = True Positives / (True Positives + False Positives)

Recall: Recall measures the proportion of correctly identified instances in the actual positive class.

Formula: Recall = True Positives / (True Positives + False Negatives)

F1 score: The F1 score is a harmonic mean of precision and recall, providing a balanced measure that takes both metrics into account.

Formula: F1 score = 2 * (Precision * Recall) / (Precision + Recall)

In these formulas:

True Positives (TP) represents the number of correctly predicted positive instances.

False Positives (FP) represents the number of instances that are predicted positive but are negative.

False Negatives (FN) represent the number of instances that are predicted negative but are positive.

The above evaluation metrics are commonly used in binary classification tasks. They provide insights into the performance of a model or system by considering both the positive and negative predictions.

Results and Discussion

Table 1 illustrates the assigned DDC class numbers by the OpenAI language model and human classifiers for selected 30 book titles as an experiment. The results reveal OpenAI language models' ongoing challenge in assigning class numbers to somewhat complex titles that involve the use of "AND" ("Literature and Gender": Human DDC: 820.9 vs Modified DDC: 801.95) or titles encompassing more than two concepts ("Culture and Imperialism" = Human DDC: 809.93358 vs Modified DDC: 325.3).

Table 1: Assigned DDC Class Numbers by Human Classifiers and OpenAI Language Model

No	Title	Assigning DDC Class Numbers Human Classifiers	OpenAI Language Model
1	Concise Oxford Dictionary of Ecology	577.03	577.03
2	Modern Elementary Statistics	519.5	519.5
3	Essentials of Sociology: From Sociology--a Text with Adapted Readings	301	301
4	Nehru on World History	903	954.035
5	Literature and Gender	820.9	801.95
6	Guide to Surgical Appointments	610	617.9
7	Atkins' Physical Chemistry	541.3	541.2
8	Britain and Europe in the Seventeenth Century	942.2	941.06
9	Culture and Imperialism	809.93358	325.3

No	Title	Assigning DDC Human Classifiers	Class Numbers OpenAI Language Model
10	Oscar Wilde: The Critical Heritage	828.809	828.809
11	Principles of Macro-Economics	339	339
12	Cation Binding by Humic Substances	572.33	546.751
13	Foundations of Buddhism	294.3	294.3
14	Project Management: A Systems Approach to Planning, Scheduling, and Controlling	658.404	658.404
15	Macbeth	822.33	822.33
16	Essentials of Indian Philosophy	181.4	181.4
17	Photoshop CS4 All-in-One for Dummies	006.686	006.6
18	Barack Obama: The Story	973.932092	973.932
19	House of Doors	813.54	813.54
20	Seven Last Words	785.7194	232.9
21	Sustainable Agriculture	630	631.584
22	E-Commerce Systems Architecture and Applications	658.84	004.678
23	Introductory Econometrics: a Modern Approach	330.015195	330.015195
24	Russia-India-China: Evolution of Geo-political Strategic Trends	327.47054	320.12
25	Coffee Culture, Destinations and Tourism	306.4819	394.12
26	The Wealth of the Nation: An Economic History of the United States	330.973	330.9,
27	Computer-aided Design in Composite Material Technology III	620.118	620.193
28	The New Encyclopedia Britannica	031	030
29	The Handbook of Communication Skills	153.6	302.2
30	Molecular Biology and Biotechnology	574.88	572.8

Source: Survey Data, 2023

Table 2 displays precision, recall, and F1 score, all of which are recorded as 0.53 (53%). This suggests that the model or system has achieved a moderate level of performance in correctly identifying positive instances and overall prediction accuracy.

Table 2: Calculated Precision, Recall and F1 Score for the Human Classification vs. OpenAI Language Model Classification

Measure	How to measure?	Calculation	Rate
Precision	**Precision** = True Positives / (True Positives + False Positives) Eg: Out of 50 books, Model A accurately assigns 40 correct DDC numbers. This gives us a precision of 40/50 = 0.8 or 80%.	*16/30* = 0.5333	53%
Recall	Recall = True Positives / (True Positives + False Negatives) Eg: Out of 50 books correctly classified by Human A, Model A accurately assigns 40 correct DDC numbers. This gives us a recall of 40/50 = 0.8 or 80%.	*16 / (16 + 14)* *16/30* = 0.5333	53%
F1 score	2 * (Precision * Recall) / (Precision + Recall) Eg: The F1 score is the harmonic mean of precision and recall. If precision is 0.8 and recall is 0.8, then the F1 score is 2 * (0.8 * 0.8) / (0.8 + 0.8) = 0.8.	*2 x (0.53 x 0.53) / (0.53 + 0.53)* *2(0.2809/ 1.06)* *2 x 0.265* *= 0.53*	53%

Source: Survey Data, 2023

Conclusion and Recommendations

Based solely on these scores, it is challenging to draw specific conclusions or predictions about the model's capabilities or future performance. Further analysis and comparisons with other models or benchmarks are necessary to gain a more comprehensive understanding of the system's predictive accuracy and potential for improvement. However, it is noteworthy that, in most cases, the OpenAI language model has attempted to assign more accurate numbers but has not achieved 100% accuracy when compared to human catalogers. In a recent study conducted by Gamage and Wanigasooriya in 2023, similar findings were uncovered. They compared disparities in cataloguing frameworks by employing Anglo-American Cataloguing Rules 2 (AACR2) between AI systems and human experts. This underscores that, as a standalone solution, OpenAI may not achieve the same level of accuracy as a fully human approach for assigning class numbers to library books.

Another significant finding of the study is that the OpenAI language model struggles to provide precise classification numbers for books with complex scenarios when limited content details are available. However, based on the innovative aspects of the study, the following recommendations can be made when using OpenAI language models, not only for complex titles but also for simpler ones when assigning classification numbers:

1. Validate classification with reliable sources: Cross-verify classification using established library classification systems or professional librarians.
2. Seek subject-matter expertise: Engage experts to ensure accurate categorization of books in specific subject areas.
3. Regularly check updates in OpenAI language model and review the classification system

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INNOVATIVE APPLICATION FOR THE STOCK VERIFICATION PROCESS OF LIBRARY MATERIALS: A CASE OF SEUSL LIBRARIES

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Abstract

With the introduction of a new University Grant Commission circular, all university libraries are required to conduct stock verifications annually if the collection is less than 100,000 items. Libraries with huge collections are facing difficulties with verifying the stock against their accession registers due to the time taken to complete the process. The South Eastern University of Sri Lanka (SEUSL) Library provided an efficient solution for the process since it reduced the extra manual work to compare the database with the verified data and reporting options. Therefore, making awareness of the university libraries about this tool is the main objective of this study. Libraries of SEUSL planned its stock verification process when it was requested to be conducted. Even though all the guidelines were followed as mentioned in the commission circular, the process becomes different at the SEUSL libraries than at other libraries since the library uses this innovative tool. The tool developed by SEUSL used the existing technologies of the universities to minimize data losses and human errors. All the techniques and process lines were developed in-house and allocated staff precisely to collect data using the given guidelines. At the end of the data collection process, all the data were screened for any issues to be noted. The tool helps to match the exact electronic version of the accession register with the physically verified data. The tool instantly provides duplicated items, missing items, shelf-wise or section-wise detailed reports etc. The tool was built using Microsoft Access for the ease of the users and there is a plan to go for an online version of the same to increase the efficiency of it. The staff can locate each item with issues by using the reports generated which consist of location details. This has separate modules and designs in a user-friendly manner. With the use of this tool, SEUSL Libraries conducted two verifications. After that modifications to the system as well as to the process were done. Since the stock verifications have been completed fully within three months, this is a good example for the other university libraries to adopt this for their verifications to finalize the process.

Keywords: *Databases, Innovation, Library tools, Stock verification*

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Introduction

South Eastern University of Sri Lanka (SEUSL) is at present served by two libraries the Main Library and the Science Library. One of the main purposes of stock verification is to find out the loss and damages of the library materials. Verification of library materials (stock) is different from the verification of stock in stores. The library materials are prone to damage due to constant wear and tear. Library materials may be lost for many reasons. Library stock verification is a time-consuming activity that needs a dedicated workforce. Difficulty in generating reports, issues due to duplicated items, and missing items that could be found at the next stock verification make the process complex. The study compares the library stock verification process with the adaptation of new tools during the years 2017 and 2022.

Like any other university library in Sri Lanka, SEUSL Libraries also followed the manual verification process for verifying the stock using the MS Excel package. Hence, MS Excel had several issues when many values of various divisions of the library were compared. It is essential to produce accurate comparisons without duplicating the accession numbers. MS Excel was found to have failed when many data comparisons were carried out due to less system capacity. Therefore, the need for a new approach arose and the SEUSL team planned to go for an innovative tool.

Methodology

To improve the stock verification process, SEUSL Library has developed a tool using the available resources in the library. Hence in this study, researchers followed the case study method to showcase the importance of using this innovative tool for other university libraries to enhance their stock verification process without facing difficulties in finalizing the stock verification report. It was decided to go for a database approach using MS Access as the preliminary requirement to develop a new tool immediately. Then it was tested with the sample data and a test run was done. In 2018, analyzed and generated reports were submitted as annexures of the final stock verification report and were approved by the library committee. The tool was first developed with basic and limited features but it gradually improved from year 2017 to 2022. The modifications for the tool were added based on the requirements of the process improvements. The time taken to verify in manual checking and using the developed tool was compared. Furthermore, the difficulties and usefulness of the new tool were compared between the two methods to conclude the findings of this study. Hence the case study approach was used as the research approach for the study and the

Library of South Eastern University of Sri Lanka was identified as the research location for the study. The results are limited only to the experience obtained after implementing the new tool for verifying the stock process at SEUSL whereas many customizations can made in accordance with the other university libraries.

The Process

The Vice-Chancellor appointed two committees to carry out the stock verification in the SEUSL Libraries including the branch libraries for the year 2017 ended on 31st December. The committee with the support of library staff verified the current stock of the library materials against the accession register of SEUSL Libraries. Committee members were grouped and assigned a certain number of shelves for each group facilitation parallel processing. All the books of SEUSL libraries contain barcodes which enable barcode scanners and mobile phone scanner applications to retrieve accession numbers of each library material. The mobile phone holders were also developed by the bindery staff of the SEUSL libraries with available resources. Physically available items on a shelf were recorded in a customized spreadsheet with the support of a barcode/mobile phone scanner and a computer.

Shelf-wise records physically taken were printed out and duly signed by the person/s who were directly involved in the stock-taking process. Then these files were collected separately for final cumulative counts. Damaged items to be discarded from the library were collected separately. Then the current stock of the library materials was verified against the accession register of SEUSL Libraries which include the Main Library, Science Library and Academic Program Centre (APC) Libraries. The missing list of books was also generated via the tool. The stock verification team first took the stock and the missing items were verified against several registers, reports, and records such as accession register, invoice accessioned, list of books lost in the Tsunami, list of books lost by flood, and declared lost items which borrowed by students and staff, list of books accessioned from Affiliated University College, list of books sent to Academic Program Centre and the previous stock verification reports.

Bibliographical details and the price of the missing items were taken referring to the accession register and invoice accessioned. At the end of the verification, all the reports for the given sections were generated using the tool used for the process as elaborated in Figure 1.

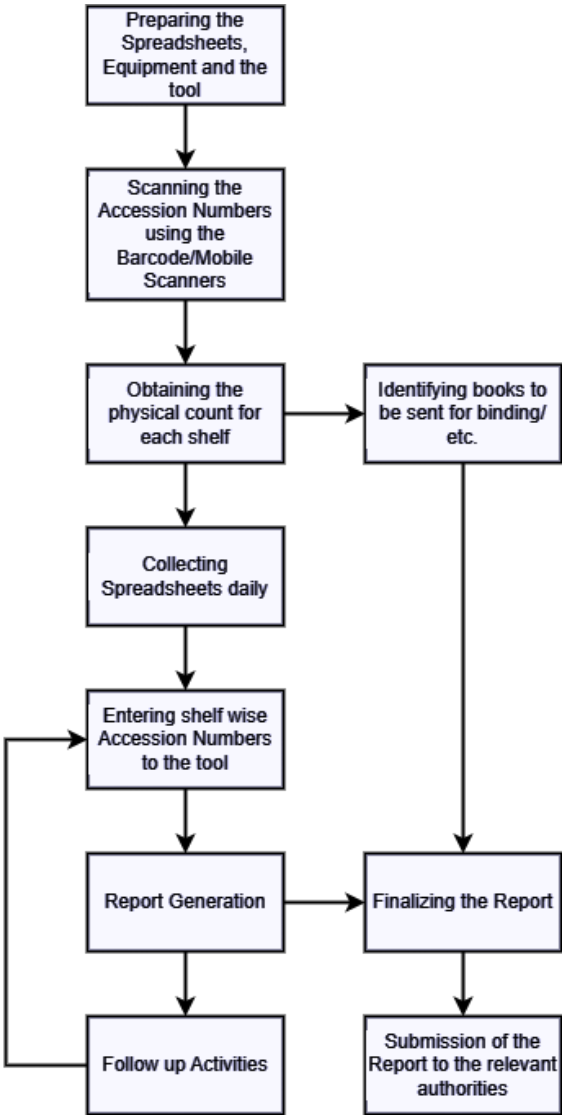

Figure 1. Stock Verification Process Carried out at SEUSL Libraries

The Tool

The inception of this tool began with a System Analyst, guided by the Librarian, SEUSL. Subsequently, an Assistant Librarian enriched it with numerous features, culminating in its current version. This tool operates as a standalone application built on Microsoft Access, empowering users to independently retrieve pertinent information through queries and reports. Once queries and reports are designed, the tool facilitates instantaneous retrieval of data. Figure 2(a) visually illustrates the tool's evolution from its initial stages.

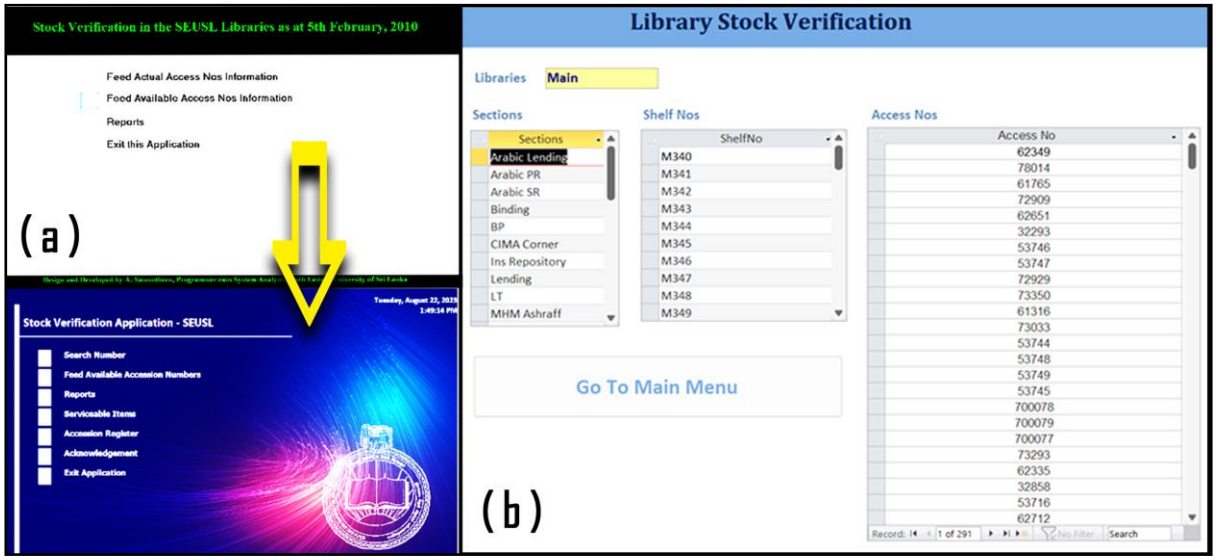

Figure 2. Home Page of the Tool at the Startup and Current Version

Results and Discussion

The previous verification processes took more than three months to finalize the full verification process. With the help of this tool, it minimizes the total collection time to a maximum of three months, which comprises approximately 100,000 library materials within the library. The tool offers features to facilitate the verification process as outlined below.

The collected data is entered through a form designed as shown in Figure-(b). All shelf-wise data gathered during the physical verification process is input into this section, which provides all the necessary information to later identify duplicate items. Upon completing the data-entry process, users can instantly generate pre-designed reports using the provided data. These generated reports serve as annexures for the final stock verification report, which is submitted to the Library Committee on time.

While this may seem like a simple and straightforward task, verifying the stock at libraries is a time-consuming process without the use of new technologies and tools. This development by the SEUSL libraries is one such attempt, and with experience, the library is exploring ways to transform it into an online version of this standalone application. Once this is accomplished, any library can customize the application for their data and complete the process.

Conclusion and Recommendations

In summary, the tool developed at SEUSL Libraries offers a innovative approach to library stock verification. The pre-designed reports generated by this tool can seamlessly align with the reporting requirements outlined in the new University Grant Commission Circular No 01/2022. Therefore, as the content of the manually processed reports and the tool-generated reports are comparable, researchers recommend adopting this novel approach in other libraries to expedite the finalization of the verification process.

Acknowledgement

This basic tool was implemented by Mr. A. Samsudeen, a Systems Analyst, with the guidance and ideas of Mr. M.M. Rifaudeen, Librarian at SEUSL. It was subsequently enriched with numerous features by the expertise of Mr. B.E.S. Bandara, Assistant Librarian, resulting in the current version.

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CHATGPT IN EDUCATION INCLUDING ITS THREATS AND LIMITATIONS: A RAPID REVIEW ON SCOPUS DATABASE

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Abstract

ChatGPT is a machine-learning system that has been trained to produce presumably effective and efficient writing from big data sets. This manuscript aims to explore the research landscape of ChatGPT in education, especially its threats and limitations by conducting a rapid search on the Scopus database. The research methodology is the rapid review of scholarly research articles published in the Scopus database in the year 2023. The searching process involved keyword searching such as "ChatGPT", "Education", "Threats", "Cons", and "Limitations". The findings revealed that the researchers used various methodologies to perform research on ChatGPT. The researchers, on the other hand, identified possible threats and limitations linked with employing ChatGPT in education. Some key findings included that educational institutions must undertake open talks with all relevant stakeholders to establish a set of standards for students and staff on the appropriate usage of AI-assisted writing tools. In conclusion, national-level policies should be made regarding the ethical use of ChatGPT and other conversational generative artificial intelligence chatbots. Faculty and academic librarians must have the responsibility of raising student awareness regarding the ethical use of ChatGPT in education especially in research.

Keywords: *ChatGPT, Artificial intelligence, Education, Threats*

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Introduction

Recent technical advances have resulted in the creation of complex Artificial Intelligence (AI) models, namely the Chat Generative Pre-trained Transformer (ChatGPT). ChatGPT is capable of producing essays, answering questions efficiently within seconds, summarizing research-related manuscripts, and generating well-written computer coding. ChatGPT is an artificial intelligence tool that has been trained to provide conversational responses to human inputs using deep-learning algorithms. The researchers stated that ChatGPT and other Natural Language Processing (NLP) technologies can improve the effectiveness of academic writing and research. For instance, AI chatbots can develop research questions and hypotheses, create experimental research protocols, develop the methodology, analyze data, interpret findings, write manuscripts, analyze case studies, summarize research papers, write assignments and provide solutions for work-based problems (Chaudhry et al., 2023; Dergaa et al., 2023). Liebrenz and colleagues (2023) indicated that the trained model answers questions, acknowledges mistakes and rejects inappropriate requests as well. ChatGPT has received extensive interest and conflicting reactions in academia since its initial debut in November 2022. Even though using ChatGPT has several advantages, the researchers are concerned about the impact on the authenticity, credibility, and transparency of academic work. ChatGPT can generate junk, malware, allegations of a person and other undesirable outcomes leading to a significant risk. The use of ChatGPT in scholarly works may result in the incorporation of erroneous or biased information into articles, possibly resulting in inadvertent plagiarism and/or concept misattribution (Dergaa et al., 2023). Therefore, standards for using Large Language Models (LLMs) ethically have already been developed by some reputed publishers, like Springer Nature. At this juncture, the scientific community urgently needs to participate in a broad discussion on the possible risks, and limitations of ChatGPT in academia. As a result, this review sought to investigate the research landscape of ChatGPT in education, its threats and limitations by a rapid search on the Scopus database. ChatGPT is relatively a controversial topic and there is limited literature regarding this in the Sri Lankan context.

Objectives

The general objective of the study is to explore the research landscape of ChatGPT in education including its threats and limitations by conducting a rapid search on the Scopus database and satisfy two specific objectives: to identify the different research methods adopted by previous researchers and to explore the threats and limitations of ChatGPT in Academia

Methodology

The Scopus database was used to perform searches as it is a well-renowned database and it provides indexing and abstracting services to many more reputed journals. Further, it is a comprehensive multidisciplinary database that includes a wide range of scholarly content. The search term “ChatGPT AND Education AND Threats OR Cons OR Limitations” was searched in title, abstract and keywords. The OR operator was used to join a group of compound keywords together to form the search string.

The search was performed in May, 2023. The search was refined by document type, i.e. article and publication stage, i.e. final. There were 23 articles retrieved. However, only 8 articles were used for review purposes. Exclusion criteria include; non-availability of full text and articles which did not reflect the scope of this study.

The search query is as follows: TITLE-ABS-KEY ("ChatGPT" AND "Education" AND "threats" OR "Cons” OR "Limitations") AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (PUBSTAGE, "final"))

Results and Discussion

Different Research Methods Adopted by the Researchers

According to the findings, the researchers used various methodologies (Table 1) to perform research, namely reviewing related scholarly articles that have been published in peer-reviewed journals indexed in reputed databases, qualitative methodology for exploratory research, expert panel discussions, constructing specific and concise ChatGPT prompts to generate responses, conducting different coding-related experiments with ChatGPT, conducting surveys, an empirical study, a quasi-experimental design and assessing the performance of ChatGPTs on standardized admission tests. The review, clearly stated that different types of methodology can be adopted to perform research in ChatGPT.

Table 1: Different Research Methods Adopted by the Researchers

No	Author	Methodology
1	Dergaa et al(2023), Sedaghat(2023)	A literature review of relevant scholarly articles, only published in peer-reviewed journals indexed in Scopus
2	Kooli(2023)	Exploratory research and data collection based on expert analysis and interpretation.
3	Sallam et al(2023)	Based on expert panel discussion and review of the existing literature. Specific and concise ChatGPT prompts were constructed and the responses were generated
4	Rahman & Watanobe (2023)	Different coding-related experiments with ChatGPT, surveys
5	Chaudhry et al (2023)	A quasi-experimental design, An empirical study to test the ChatGPT capability of solving a variety of assignments to compare its performance with the highest scored student(s).
6	Fergus et al(2023)	Evaluating academic answers generated using ChatGPT
7	Giannos & Delardas(2023)	Performance of ChatGPT on UK Standardized Admission Tests

Threats of ChatGPT in Education

The researchers indicated the potential threats (Table 2) associated with using ChatGPT in education. Dergaa et al. (2023) emphasised the importance of comprehensive debates and ethical issues in the use. Further, the researcher stated that Chatbots will infiltrate the educational sector and undoubtedly alter research procedures. Furthermore, the researcher claimed the possibility that AI intelligence systems and chatbots will be abused, destroying educational goals as a mechanism of knowledge and skill-building processes (Kooli, 2023). Sallam et al. (2023) conducted a study to look into the benefits and drawbacks of using ChatGPT in medical, dentistry, pharmacy, and public health education. The findings stated that the content generated by ChatGPT was common across all the healthcare disciplines investigated and that included the issues in data privacy, the potential risk of generating inaccurate and biased content, and the risk of critical thinking and communication skills

deterioration of healthcare students. Furthermore, when utilizing ChatGPT to write articles, there was a possibility of plagiarism, copyright concerns, and academic dishonesty.

Table 2: Threats and Limitations of ChatGPT in Education

No	Threats and Limitations	Authors
1	Chatbots will infiltrate the educational sector and undoubtedly alter research procedures.	Dergaa et al. (2023)
2	AI intelligence systems and chatbots will be abused, destroying educational goals as a mechanism of knowledge and skill-building processes.	Kooli (2023)
3	The issues in data privacy, the potential risk of generating inaccurate and biased content, and the risk of critical thinking and communication skills deterioration of healthcare students. Possibility of plagiarism, copyright concerns, and academic dishonesty.	Sallam et al. (2023)
4	Risk of employing ChatGPT to cheat in online tests	Rahman & Watanobe, 2023
5	GPTZero and Copyleaks except for Turnitin and iThenticate, appear insufficient at this present state to analyze the essays created by AI-based ChatGPT	Chaudhry et al. (2023)
6	It is unclear how the ChatGPT handles harmful content and plagiarism. ChatGPT's competence is not yet at a totally acceptable level. There is still the chance of erroneous statements and missing medical information. The abstracts and contents generated by ChatGPT can be identified by reviewers.	Sedaghat (2023).
7	The ChatGPT technology struck a barrier when it came to queries about applying knowledge and interpreting non-text information. ChatGPT has limits in areas like mathematical and scientific understanding and applications.	Giannos and Delardas's (2023) Fergus et al. (2023)

Online tests are becoming more common in higher education. Educators and institutions must be aware of the risk of employing ChatGPT to cheat in online tests because it can produce text that looks like a human-generated one for academic themes (Rahman & Watanobe, 2023). Even if the ChatGPT writes acceptable academic abstracts or reviews, it is unclear how the ChatGPT handles harmful content and plagiarism (Sedaghat, 2023). As a result, students and scholars who use ChatGPT professionally for academic writing should exercise caution.

In their study, Chaudhry et al (2023) assessed the assignments generated by ChatGPT using the most well-known plagiarism detection programmes, including Turnitin, GPTZero and Copyleaks to see whether the assignments could pass academic integrity tests. The tools for detecting AI-produced text, such as GPTZero and Copyleaks except for Turnitin, appear insufficient at this present state to analyze the essays created by AI-based ChatGPT. As a result, before blindly accepting AI-assisted writing tools, educational institutions are required to undertake open discussions with all key stakeholders to create realistic expectations for students about permissible use of them. Sedaghat (2023) said in another study that the iThenticate plagiarism detection programme discovered several plagiarism matches for AI-generated abstracts.

On the other hand, the researchers stated how to overcome the threats imposed by ChatGPT in higher education. Kooli (2023) pointed out that present academic systems must be modified to accommodate emerging chatbots and AI systems. AI system developers should be more ethical, transparent and accountable when creating systems that may bring harm to researchers, educators and students. Raising awareness, enacting relevant legislation and cementing ethical ideals will boost research and safeguard educational systems.

Limitations

Fergus et al. (2023) devised research to assess academic responses generated using ChatGPT. The ChatGPT generated responses for questions related to understanding and knowledge by employing the verbs "discuss" and "describe". The ChatGPT technology struck a barrier when it came to queries about applying knowledge and interpreting non-text information. The findings are also consistent with Giannos and Delardas's (2023) findings that ChatGPT has limits in areas like mathematical and scientific understanding and applications. Similarly, another researcher observed that ChatGPT performance was lower than that of medical students, concluding that ChatGPT's competence is not yet at a totally acceptable level (Sedaghat, 2023).

Sedaghat (2023) did research on ChatGPT applications in medical practice, education, and research. According to the study, ChatGPT has the potential to facilitate interactions between healthcare providers and patients in a variety of ways. However, advanced tasks such as understanding human anatomy remain a ChatGPT constraint. ChatGPT can help simplify radiological reports, but there is still the chance of erroneous statements and missing medical information. Furthermore, the findings showed that while all ChatGPT-derived abstracts were well-written, just 8% of them adhered to the journal's formatting criteria. Because of the 'vaguer' and more 'formulaic' style of writing, 68% of the generated abstracts using ChatGPT were correctly identified by the reviewers.

Conclusion

According to the review results the following conclusions have been made by the reviewer. National-level policies should be made regarding the ethical use of ChatGPT and other conversational generative artificial intelligence chatbots. Faculty and academic librarians must have the responsibility of raising student awareness regarding the ethical use of ChatGPT in education especially in research. Further, every assignment and academic work submitted by students and scholars should be checked with plagiarism-checking software as Turnitin and iThenticate identify plagiarism matches. Not only ChatGPT but other options such as Google’s Bard and Microsoft’s Bing are emerging alongside ChatGPT. Therefore, Turnitin and other integrity platforms should develop the ability to detect AI-generated text. Standing Committee of Library and Information Sciences of University Grants Commission, Sri Lanka, Universities and other Higher Education Institutes should check whether the anti-plagiarism software detects documents generated by ChatGPT before making purchasing decisions.

Furthermore, students and scholars who use ChatGPT professionally for academic writing should exercise caution because ChatGPT may provide misleading information and generate fraudulent references. It has been suggested that ChatGPT may 'fabricate facts' to provide an answer. ChatGPT's capability is not yet totally satisfactory. This AI chatbot still needs to develop in terms of knowledge application and understanding of non-text material. Despite ChatGPT providing lots of information, however, the authenticity and reliability of information are still questionable. In conclusion, the humans are smarter than ChatGPT.

Suggestions

It is suggested that future researchers who wish to perform research on the topic of ChatGPT or other conversational generative artificial intelligence chatbots can adopt different kinds of methodology performed by previous researchers. The findings of this review will motivate researchers to focus more on the AI related topics as there was limited literatures regarding this in the Sri Lankan context.

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EFFECT OF OPEN ACCESS PUBLISHING ON THE DISSEMINATION OF SCIENTIFIC KNOWLEDGE: A REVIEW USING EMERALD DATABASE

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Abstract

In today's dynamic and vibrant global scenario, Open Access (OA) publishing is one of the current topics among research scholars since it offers unrestricted free access to scholarly research, promoting greater accessibility and dissemination of scientific knowledge. Therefore, through this study, researchers reviewed the effect of open access publishing on the dissemination of scientific knowledge, by utilizing the Emerald Database. Moreover, by examining the advantages, disadvantages, and contribution to research visibility to the growth of scientific information, researchers sought to investigate the effect of open access publishing on the diffusion of scientific knowledge through this review article. Researchers also recognized future opportunities and suggested fixes for issues with open access publishing. This review was organized using the Interactive Literature Review Process (ILRP), which had been developed by former researchers. It used a few particular processes that can be applied to the development of review articles. In order to locate relevant publications for this review, search terms and search strategies were filtered and modified for all emerald content, including journal articles, book parts, case studies, early-cited articles, and expert briefings. These terms and search strategies are related to "open access publishing," "knowledge dissemination and sharing," "open access institutional repositories," and "challenges of open publishing." 18 articles were chosen at random by the researchers after taking into account the article's title and relevance. The review addresses the possible barriers to scientific communities embracing open publishing formats as well as the potential benefits of open access, including increased exposure while raising issues with disseminating information, accessibility, and citations in open access publications. This study contributes to the ongoing discussion on open access publishing by providing a comprehensive overview of its effects on the dissemination of scientific knowledge.

Keywords: *Open access publication, Scholarly knowledge dissemination, Research visibility*

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Introduction

The conventional landscape of scientific publishing has experienced an immense shift in an era marked by quick technological advances and a constantly growing worldwide network. The emergence of Open Access (OA) publications has become a disruptive force, altering how scientific knowledge is shared and addressing fundamental agreements among academic and research groups. The attention and consideration of both the scientific community and academic community are vital in the context of OA publishing. The studies done by Velterop (2003) and Matheka et al. (2014) provide fundamental definitions for the concept of open access. "Open Access" designates a circumstance in which content is made instantly, freely and without limitations. The goal of open access publication is to democratize knowledge and promote research findings and scientific knowledge without a barrier of geographical and national. It is about providing unrestricted access to academic publications, which strives to remove informational obstacles.

Since OA publications are the most effective way to extensively disseminate scholarly knowledge in the modern academic environment, scholars from all over the world are looking for unrestricted publications in the world. The benefits of OA surpass boundaries and do away with obstacles to the dissemination of scientific knowledge. It is important to emphasize that there is a strong demand for OA publications among the scientific community and that the necessity for open access work has already been proven. It is interesting that even while the value of open access is widely recognized, the actual contribution of OA publishing and dissemination is still a subject that has not been thoroughly studied. In considering this gap, researchers have started a study to identify articles that discuss the benefits and difficulties of OA publishing in the field of disseminating scientific knowledge.

Objectives

Researchers aimed to examine the influence of OA publishing on the dissemination of scientific knowledge by considering its benefits, drawbacks and contribution made to research visibility to the advancement of scientific knowledge. Further, researchers intended to identify the recommended solutions for problems encountered in OA publishing and prospects. Finally, researchers attempted to identify the role of OA publication in forming the modern scientific landscape and its potential implications for the future of scholarly communication digital era.

Methodology

The Interactive Literature Review Process (ILRP) developed by Combs, Bustamante and Onwuegbuzie (2010) is used as a base for the organization of the review. The nine steps of the ILRP model are:

> "(a) Exploring belief systems, (b) Initiating the literature review process, (c) Selecting a topic, (d) Exploring the literature: identifying themes, (e) Formulating a focus: selecting/deselecting themes, (f) Analyzing/interpreting/integrating literature, (g) Closing the literature search: reaching saturation, (h) Writing the review of literature, and (i) Evaluating the process and product." (Combs et al., 2010. p 162).

Among the nine core steps of the ILRP model, researchers used only a few specific steps, which can be adapted to a review article development. To find pertinent publications for this review, terms and phrases relating to "open access publishing," "knowledge dissemination/sharing," "open access institutional repositories" and "challenges of open publishing," were used and the search and search strategies were filtered and altered for the contents in the Emerald database including journal articles, book chapters, case studies, early cited articles and expert briefings. The researchers selected 18 articles randomly by considering the title of the article and its appropriateness. The searches of this study, spanned the period from 2005 to 2023, ensuring that recent developments were included. During the synthesis process, publications on the Advantages of OA Publishing, Drawbacks and Challenges of OA Publishing, Impact on Research Visibility and Citations, and Advancement of Scientific Knowledge were segmented for the organization of the content. Further, recommended Solutions for the challenges encountered in Open Access Initiatives, Advancement of Scientific Knowledge and Future Prospects of Open Access Publishing were also examined throughout this review process. The primary ethical concerns for this review go to accurate source identification and proper citation. The authors made sure that all references were correct and then acknowledged the original authors for their academic contribution to open access publications and their contribution toward scientific knowledge dissemination around the world.

Results and Discussion

Advantages of Open Access Publishing

The dissemination, access and use of research across the international academic community are being revolutionized by open access publications, which have emerged as a disruptive paradigm in scholarly communication. This research review explores the benefits of open access publication by using data from numerous studies to examine how it affects cooperation, knowledge sharing and research visibility. It has outlined many advantages of open access publishing while providing pertinent studies that help readers comprehend these benefits.

Breaking down barriers, allowing unlimited access to scholarly literature and expanding its influence to a global audience are the fundamental values of open access publications. Unrestricted access to scholarly literature is made possible through open access publishing, which expands the content's global reach and influence. In their study, Chan and Costa (2005) discussed, how open access improves participation in the "global knowledge commons" by enabling research distribution in developing nations. In their investigation into the adoption and acceptability of open access publishing, Indian researchers, Nazim et al. (2019) highlighted how open access improves the usability of research results.

The mutually beneficial relationship between open access publishing and research impact also appears frequently. Open Access content frequently has greater visibility, which raises the number of citations and impacts. The beneficial relationship between open access publishing and the effect of research was highlighted by Garca-Pealvo et al. (2010). According to a study conducted in Indonesian university libraries by Farida et al. (2015), open access repositories contribute to the dissemination of impactful research. By eliminating traditional barriers to accessing research, open access publishing promotes interdisciplinary collaboration. The context then shifts to emphasize the value of open access in promoting interdisciplinary cooperation and successfully removing long-standing barriers to knowledge transfer between fields. Open access journal portals are a crucial component of the infrastructure for non-commercial scholarly publications, enabling collaboration among researchers from numerous disciplines (Björk, 2017).

Also, by reducing publication delays while promoting real-time knowledge sharing, open access publishing speeds up the dissemination of research findings. The experiences of the Libyan scientists profiled in Mahmood et al.'s (2009) case study emphasize the significance of open access in fostering information exchange among scientists. Moreover, open access encourages equitable access to knowledge and enables research findings accessible to researchers from all socioeconomic backgrounds. This has been proven during the research conducted by Kodua-Ntim and Fombad (2020). Their research aim was to investigate methods for using open access institutional repositories in Ghana to promote knowledge equity in the area.

Research can become more financially viable due to open access which can reduce fees for subscriptions for both institutions and individuals. In his 2010 study, Bernius examined how open access affected the administration of scientific knowledge and focused on how it could reduce costs throughout the ecosystem of scholarly communication. Systematic changes in scholarly communication may result from organizations and

governments adopting open access policies. The research conducted by Otto and Mullen (2019) shed insight into the policy's transformative potential by examining faculty responses and implementation lessons acquired from the Rutgers open access policy.

Drawbacks and Challenges of Open Access Publishing

By having research outputs more easily accessible, open access publishing has undoubtedly transformed scholarly communication. However, researchers emphasized the disadvantages and challenges associated with the adoption and application of open access throughout their studies. This study sheds light on the many factors that must be taken into account to ensure the continuous success and growth of open access publishing, from concerns with economic sustainability to those with quality assurance and accessibility.

The economic sustainability and funding models are significant barriers to open access. Alternative funding sources, such as Article Processing Charges (APCs) or institutional sponsorship, are frequently required for open access publishing to maintain the publication process. The difficulties in controlling scientific knowledge were highlighted by Bernius (2010) due to funding changes and the accompanying costs of open access. Concerns regarding upholding strict peer review procedures and assuring the high quality of published research have been highlighted by the shift to open access. The significance of preserving trustworthy quality control procedures inside OA journal portals was covered by Björk (2017) in his study. Despite open access's rising popularity, some researchers are still unfamiliar with and ignorant of its guiding principles. Effective knowledge management techniques are essential, according to Farida et al. (2015), to promote author participation in OA institutional repositories.

Although open access strives to increase accessibility, issues with the digital divide in certain regions prevent fair access to online resources. The differences in access to and distribution of research, particularly in developing nations, were highlighted by Chan and Costa (2005). Open access is also limited by cultural and institutional barriers and different cultural and institutional contexts have different levels of acceptance and adoption of open access. Kodua-Ntim and Fombad (2020) examined ways to encourage Ghanaian universities to use open access repositories. Navigating complicated copyright and licensing agreements is a common part of open access, which affects how research products can be used and shared. The difficulties in managing copyright and sharing openly available knowledge were examined by Garca Pealvo et al. (2010). Moreover, open access initiatives need a strong technological foundation to allow content distribution and archiving. In their analysis of the

accessibility of scholarly content, Stoyanova and Yordanova (2014) compared open access platforms. Ukwoma and Onyebinama (2021) examined the difficulties faced by librarians in Nigeria, indicated that maintaining and sustaining OA repositories can be difficult for institutions.

Impact on Research Visibility and Citations

Scholarly research exposure and citation rates have been significantly impacted by the growth of open access publishing. Making research publicly available through OA platforms has been acknowledged as having benefits for both academics and their institutions, including increased research visibility, wider distribution and possibly higher citation rates. This change makes academic publications more accessible to a larger global audience and is consistent with the objectives of knowledge democratization and accessibility. Studies like such by Bernius (2010) and Chan and Costa (2005) highlighted the fact that open access gives researchers access to a wider audience than is possible with traditional subscription-based journals, which helps to boost the exposure of their work. According to Chiware (2020), who explored open research data in African academic and research libraries and Nazim et al. (2019), who discussed the acceptance and adoption of OA publication in India, this accessibility is especially helpful for researchers from developing nations.

The effect of open access on citations is a subject that the scholarly community is very interested in. Numerous research studies have investigated the connection between open access and citation rates and they have found a positive correlation. According to Nazim et al. (2023), who examined the patterns of open access publication in India, OA articles frequently earn more citations than their non-OA counterparts. This occurrence can be attributed to the greater readership and possibilities for collaboration that come with OA research's expanded accessibility. Similar to this, research from Farida et al. (2015) and Ukwoma and Onyebinama (2021) showed that open access institutional repositories can increase research exposure and citations, giving researchers a platform to present their work. Although a positive correlation is frequently seen, the precise relationship between open access and citation impact can be affected by several variables, such as the discipline, the quality of the study and dissemination tactics. Overall, the trend indicates that open access publishing aids in extending the audience for research, which in turn raises its exposure and citation potential. Further, it encourages increased interaction and collaboration among scholars.

Advancement of Scientific Knowledge

By eliminating boundaries that have traditionally prevented research findings from being widely disseminated and made accessible, the emergence of open access publishing has considerably aided the spread of scientific knowledge. The research covered in the sources highlights the part that open access plays in establishing a scholarly communication environment that is more diverse and effective. By giving academics from underdeveloped nations the chance to publish their work on a worldwide scale, Mahmood, Rowley, and Hartley's 2009 case study of Libyan scientists showed how open access may empower researchers. Through the provision of a variety of viewpoints and insights, this access not only advances individual researchers but also enhances the entire scientific community.

Additionally, the availability of research content via OA platforms contributes to the acceleration of scientific advancement. The studies of Garca Pealvo et al. (2010) and Bernius (2010) emphasized the value of open knowledge in fostering collaboration, enabling researchers to build on previous research and produce novel solutions more successfully. Scholars from different locations can engage in multidisciplinary exchanges and contribute to the advancement of knowledge in a way that crosses geographical boundaries. Furthermore, the research by Nazim et al. (2023) and Farida et al. (2015) illuminated how open access institutional repositories support the conceptualization of models that integrate knowledge management viewpoints, thereby improving the accessibility and usability of research outputs within academic libraries.

As revealed in many research, the democratization of knowledge made possible by open access publication not only encourages global dissemination but also could close knowledge gaps across multiple geographies, academic fields and institutions. Open access promotes collaboration, lowers access barriers and makes it easier to share research across national boundaries. This opens the door for innovation and discovery in a world that is changing quickly.

Recommended Solutions for the Challenges Encountered in Open Access Initiatives

While open access initiatives are crucial for increasing access to scholarly research, they frequently face difficulties that need careful consideration to ensure that they are implemented successfully. Different approaches have been proposed by academics and researchers to solve these issues and improve the viability of Open access initiatives. To overcome the difficulties posed by the dissemination of research in developing nations, Chan and Costa (2005) stressed the significance of stakeholder participation and partnerships. They

believe that promoting global cooperation and utilizing resources can aid in closing the gap in access inequities.

The establishment of explicit institutional policies and guidelines is one suggested approach to overcoming the difficulties of open access publishing. Ukwoma and Onyebinama (2021), and Nazim et al. (2023), highlighted the need for well-established open access policies at universities and institutions. These guidelines can assist authors, researchers, and librarians in using open access resources efficiently while simultaneously guaranteeing adherence to copyright and licensing regulations. A progressive and well-communicated move to open access models is also emphasized by initiatives like the "transition towards open access" as seen at the University of Hong Kong, as highlighted by Chan and Cheung (2017). It allows researchers the opportunity to adjust and adapt to new practices.

Another approach is to encourage researchers and authors to become informed and knowledgeable about open access. To help researchers comprehend the advantages of open access publication and repository usage, studies like those by Farida et al. (2015) and Chiware (2020) emphasized the significance of knowledge management and training programs. Institutions may provide authors with the power to decide whether to share their work publicly by educating academics on open access principles, copyright problems and repository functionalities. The success of open access programs is also greatly influenced by technology infrastructure. Researchers like Stoyanova Trencheva and Yordanova Todorova (2014), Kodua-Ntim and Fombad (2020) supported the creation of reliable and accessible open access platforms and repositories through their studies. The needs of researchers and end users should be considered as these platforms should enable smooth access, preservation and distribution of research outputs.

Prospects of Open Access Publishing

The scholarly communication landscape is expected to continue to change and evolve because of open access publishing. The knowledge acquired from the studies emphasizes the ongoing initiatives to remove obstacles and increase the advantages of OA, paving the road for a more equal and open sharing of knowledge. The growing acceptance and implementation of open access in nations like India and Nigeria imply a good trajectory towards enhanced research exposure and collaboration, as shown by Nazim et al. (2019) and Ukwoma and Onyebinama (2021). These patterns imply that OA will continue to pick up steam as researchers, institutions, and politicians acknowledge its ability to democratize access to research results considering shifting policy perspectives and institutional strategies.

Moreover, the future of OA is anticipated to be shaped by technological developments and novel publication paradigms. The studies by Stoyanova Trencheva and Yordanova Todorova (2014) and Chiware (2020) showed a trend towards more complex infrastructure to support OA initiatives. They also showed an increasing interest in exploiting digital repositories and open research data platforms. Additionally, the initiatives taken by universities and organizations to implement OA policies suggest a proactive approach to fostering a culture of open scholarship, as demonstrated by the experiences of institutions like the University of Hong Kong (Chan & Cheung, 2017) and Rutgers University (Otto & Mullen, 2019).

Conclusion

The emergence of open access publishing has brought in a new era of boundless access and sharing of scientific knowledge, marking a transformational shift in the landscape of scholarly communication. Table 1 summarizes the key findings about the (1) Advantages of open access publishing; (2) Drawbacks and challenges of open access publishing; (3) Impact on research visibility and citations (4) Advancement of scientific knowledge; (5) Recommended Solutions for the challenges encountered in open access initiatives and (6) Prospects of open access Publishing.

The analysis of the related publications in the Emerald database reveals the significant impact that open access publication has had on the diffusion of scientific knowledge. There is no arguing the benefits of open access publication, including improved research accessibility, information sharing, better visibility and the potential for more citations. It is essential for boosting collaboration, expanding access to research dissemination and hastening the diffusion of scientific knowledge. The path to open access, meanwhile, is not without its difficulties. Significant obstacles include difficulty with peer review, quality control and sustainability. Addressing these issues requires long-term funding strategies, reliable quality control procedures, and increased awareness through education and promotional activities.

Through improvements in accessibility, cooperation and the dissemination of scientific knowledge, open access publication has the potential to change the scholarly landscape. Open access publication serves as an effective tool for democratizing access to research and advancing global science at a time when information transmission is of utmost importance.

Table 1: Summary of the Key Findings

Authors	Advantages of Open Access Publishing	Drawbacks and Challenges of Open Access Publishing	Impact on Research Visibility and Citations	Advancement of Scientific Knowledge	Recommended Solutions for the Challenges Encountered in Open Access Initiatives	Prospects of Open Access Publishing
Bernius, S. (2010)	- Increases accessibility to knowledge - Promotes knowledge sharing - Facilitates collaboration	- Sustainability concerns - Quality control and peer review challenges	- Increased visibility - Potential for more citations	- Accelerates the dissemination of research	- Quality assurance mechanisms have been introduced	- Growth in open access adoption - Evolving policies and standards
Björk, B. C. (2017).	- Supports non-commercial scholarly publishing	- Infrastructure development - Financial sustainability	- Enhances discoverability of research - Citation advantages	- Provides a platform for open access publishing	- Collaborative funding and infrastructure - Legal frameworks	- Vital for non-commercial open access publishing
Boock, M., Todorova, T. Y., Trencheva, T. S., & Todorova, R. (2020).	- Enhances awareness of open access among Bulgarian authors	- Limited awareness and preferences	- Not specified	- Increases the adoption of open access publishing	- Awareness campaigns and training	- Potential for open access growth in Bulgaria
Chan, G. R., & Cheung, A. S. C. (2017).	- Transition toward open access in the University of Hong Kong	- Transition challenges	- Positive impact on visibility	- Supports the transition toward open access	- Collaborative initiatives - Capacity building	- Continued growth in open access publishing
Chan, L., & Costa, S. (2005).	- Opportunities and challenges for developing countries	- Infrastructure and access challenges	- Global participation and dissemination	- Promotes global knowledge sharing	- Collaboration and technology solutions	- Growth in global knowledge commons
Chiware, E. R. (2020).	- Analysis of open research data in African libraries	- Challenges in managing research data	- Not specified	- Supports open research data initiatives	- Capacity building and infrastructure	- Potential for growth in open research data

Authors	Advantages of Open Access Publishing	Drawbacks and Challenges of Open Access Publishing	Impact on Research Visibility and Citations	Advancement of Scientific Knowledge	Recommended Solutions for the Challenges Encountered in Open Access Initiatives	Prospects of Open Access Publishing
Farida, I., Tjakraatmadja, J. H., Firman, A., & Basuki, S. (2015).	- Conceptual model for open access institutional repositories	- Not specified	- Supports knowledge management	- Advances knowledge management in libraries	- Framework for open access repositories	- Enhances knowledge management
García Peñalvo, F. J., Garcia de Figuerola, C., & Merlo, J. A. (2010).	- Challenges and facts about open knowledge	- Knowledge dissemination challenges	- Not specified	- Promotes open knowledge sharing	- Advocacy and education	- Continued challenges and opportunities
Kodua-Ntim, K., &Fombad, M. C. (2020).	- Strategies for the use of open access repositories in Ghana	- Adoption challenges in Ghana	- Supports access to research	- Promotes the use of open access repositories	- Awareness and training	- Potential for growth in open access use in Ghana
Mahmood, I., Rowley, J., & Hartley, R. (2009).	- Case study of scientific publishing in Libya	- Challenges faced by Libyan scientists	- Not specified	- Highlights challenges in scientific publishing	- Advocacy and support	- Potential for improvements in Libya
Matheka, D. M., Nderitu, J., Mutonga, D., Otiti, M. I., Siegel, K., & Demaio, A. R. (2014).	- Implications for knowledge equity in Kenya	- Implications for knowledge equity	- Not specified	- Promotes knowledge equity in Kenya	- Implications for research in Kenya	- Potential for knowledge equity
Nazim, M., & Zia, S. (2019).	- Acceptance and adoption of open access in India	- Adoption trends in India	- Not specified	- Promotes open access adoption in India	- Advocacy and awareness	- Growth in open access publishing in India

Authors	Advantages of Open Access Publishing	Drawbacks and Challenges of Open Access Publishing	Impact on Research Visibility and Citations	Advancement of Scientific Knowledge	Recommended Solutions for the Challenges Encountered in Open Access Initiatives	Prospects of Open Access Publishing
Nazim, M., Bhardwaj, R. K., Agrawal, A., & Bano, A. (2023)	- Trends and policy perspectives on open access in India	- Policy implications and trends	- Not specified	- Policy perspectives on OA in India	- Policy recommendations	- Potential for policy changes in India
Otto, J. J., & Mullen, L. B. (2019).	- Rutgers University open access policy implementation	- Faculty reaction and lessons learned	- Not specified	- Supports open access policy implementation	- Lessons from implementation	- Lessons for open access policy implementation
Ramalho Correia, A. M., & Carlos Teixeira, J. (2005).	- Scholarly publishing reform and challenges	- Challenges in scholarly publishing	- Historical perspective	- Highlights challenges and reforms	- Advocacy and reform initiatives	- Continued challenges and reforms
Stoyanova Trencheva, T., & Yordanova Todorova, T. (2014).	- Comparative study of open access in DOAJ	- Comparative analysis of DOAJ journals	- Not specified	- Provides insights into DOAJ journals	- Comparative analysis	- Potential for growth in DOAJ
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INTELLECTUAL FREEDOM AND CENSORSHIP IN THE CODE OF ETHICS: A COMPARATIVE ANALYSIS

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Abstract

Professional organizations follow ethical frameworks to enhance their profession effectively and qualitatively. Librarians as professional organizations try to build up their profession and have created a "Code of Ethics" as a guideline. In the local context, there are few attempts to discuss the code of ethics and profession of Library and Information Science (LIS) specifically addressing intellectual freedom and censorship. This research mainly focused on the code of ethics in the LIS profession and addressed intellectual freedom and censorship in the Sri Lanka Library Association (SLLA) and various globally available codes of ethics. This study aims to find answers to the four research questions. They are, why is the code of ethics important to the library profession, why intellectual freedom and censorship matters are important in the code of ethics in the library profession, how intellectual freedom and censorship have been mentioned in the codes of ethics in library associations and what are the similarities and differences between the SLLA code of ethics and other codes of ethics on intellectual freedom and censorship concerns in library associations. This study conducted qualitative research, mainly using a document-based research methodology looking through official papers of the five codes of ethics that were purposely selected to find similarities, variances, and approaches to dealing with censorship and intellectual freedom. For this study, the American Library Association's (ALA) Code of Ethics, the International Federation of Library Association and Institutions (IFLA) Code of Ethics, the Australian Library and Information Association's (ALIA) Code of Ethics, the Code of Professional Conduct, Canadian Library Association (CLA) and the Code of Ethics and Ethics in Sri Lanka Library Association (SLLA) were selected as the sample of the study among 60 codes of ethics globally. Intellectual freedom, resistance to censorship, handling challenged materials, promoting open access, and emphasizing professional responsibility are similarities found among all sample codes of ethics. There are a few differences that can be identified between CLA, ALA, ALIA, and IFLA that were highlighted in addressing regional matters, law and regulation, and censorship based on country perceptions. The study recommended the SLLA code of ethics to enhance their future performance in cooperating with views of international codes of ethics such as ALA, ALIA, CLA and IFLA.

Keywords: *Censorship, Code of Ethics, Intellectual freedom, Library associations, Library professionals*

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Introduction

Professional ethics refers to a set of standards that govern the behaviour of professionals. These standards have become increasingly important as society expects professionals to act responsibly. Each profession should create its ethical code that clearly outlines its principles and values (Gallaba, 2009). This code serves as a guide for ethical behaviour, providing a standard for how professionals should interact with both subordinates and the users of the libraries. Unlike laws, an ethical code is a framework that can sometimes eliminate the need for legal regulations. All professionals are expected to follow this code and prioritize ethical conduct in all aspects of their work. Therefore, professional associations usually develop codes of ethics specific to their respective professions in each country.

Librarianship is a prominent profession throughout the world and national library associations are encouraged to establish their codes of ethics. According to Koehler (2006), there are approximately 180 general and 380 specialized national library associations globally, but only a small fraction (8.1%) has implemented codes of ethics for library professionals. However, Library and Information Science Associations have developed five types ethical codes based on different perspectives, including deontological, utilitarian, judicial, aspirational, and educational codes (Koehler, 2006).

Most of the literature focuses on the code of ethics under various topics. This literature covers subjects related to professional ethics for librarians (Shachaf, 2005; Weerasooriya, 2016; Verma & Shahane, 2018), library and information professionals (Koehler, 2006), the role and functions of a code of ethics (Froehlich, 2000), intellectual freedom (Dole et al., 2000; Froehlich, 2000; Koehler, 2006; Foster & McMenemy, 2013), censorship (Froehlich, 2000; Koehler, 2006), and the principles and values of librarianship (Froehlich, 2000; Gorman, 2005; Koehler, 2006; Foster & McMenemy, 2013). Ali (2004) asserts that intellectual freedom is the cornerstone of democracy and the open exchange of ideas. It empowers individuals to explore diverse perspectives, challenge established norms, and express varied opinions. Intellectual freedom is crucial for democracy as it allows people to openly share viewpoints and question prevailing beliefs. Censorship can be broadly defined as the act of suppressing, excluding, removing, or restricting public access to library resources based on content or authorship (Ali, 2004). Intellectual freedom and censorship emphasize users' rights to information sharing and access (Ali, 2004; Koehler, 2006).

In the local context, research related to intellectual freedom and censorship has been notably absent. However, several studies have been conducted on topics such as library professionals, the significance of a code of ethics and the role of the Sri Lanka Library

Association (SLLA) as a professional organization in advancing the library profession in Sri Lanka (Gallaba, 2009; Weerasooriya, 2016; Anandathissa, 2018). At the same time, Vithana and Weerasinghe (2017) have conducted a study regarding the code of ethics based on the core area of "access to information" comparison between SLLA and international bodies IFLA, ALA and CILIP. Surprisingly, no research has been undertaken specifically addressing the code of ethics concerning intellectual freedom and censorship. Therefore, this study endeavours to bridge this research gap by exploring the importance of intellectual freedom and censorship within the context of various globally available codes of ethics.

Comparative analysis of both local and global codes of ethics is significant because it helps uncover similarities and differences, facilitating the identification of areas that may require updates or revisions to address contemporary ethical concerns. Hence, this research was conducted to address the gap in the coverage of intellectual freedom and censorship within various codes of ethics. This study aims to find answers to the following research questions:

1. Why is the code of ethics important to the library profession?
2. Why intellectual freedom and censorship matters are important in the code of ethics in the library profession?
3. How intellectual freedom and censorship have been mentioned in the codes of ethics in library associations?
4. What are the similarities and differences between the SLLA code of ethics and other codes of ethics on intellectual freedom and censorship concerns in library associations?

Methodology

This study employed a qualitative research approach. Freedom of Access to Information and Freedom of Expression (FAIFE), a subcommittee of IFLA had collected 60 codes of ethics for librarians globally and published them on the IFLA website. For this study, 60 codes of ethics were considered as the population. Five codes of ethics were purposely selected: the American Library Association's Code of Ethics (ALA) as the oldest, the Code of Ethics and Ethics in Sri Lanka Library Association (SLLA) as the newest, the Australian Library and Information Association (ALIA) Code of Ethics and the Code of Professional Conduct, Canadian Library Association (CLA) representing average ages. Although the International Federation of Library Association and Institutions (IFLA) is an independent non-government organization, it was selected as a sample of the study, because it

is the global voice of libraries, supporting to enhance the library profession and services worldwide. IFLA has provided many guidelines related to libraries and library professions including a code of ethics. A comparative content analysis was conducted considering these five codes of ethics to identify similarities and differences regarding the principles related to intellectual freedom and censorship.

Results and Discussion

After conducting a study, data was collected regarding the codes of ethics from five different countries. Table 1 summarizes the details of these sample codes of ethics and their respective approaches to addressing intellectual freedom and censorship within their codes.

Table 1: Description of Sample Codes of Ethics

Code of Ethics	Year of Adoption	Years of Amendments	Main Points Discussed in Codes of Ethics	Remarks
ALA	1939	1981, 1995, 2008	1. We provide the highest level of service to all library users through appropriate and usefully organized resources; equitable service policies; equitable access; and accurate, unbiased and courteous responses to all requests. **2. <u>We uphold the principles of intellectual freedom</u> and "resist all efforts to censor library resources".** 3. We protect each library user's right to privacy and confidentiality concerning information sought or received and resources consulted, borrowed, acquired or transmitted. 4. We respect intellectual property rights and advocate a balance between the interests of information users and rights holders. 5. We treat co-workers and other colleagues with respect, fairness, and good faith, and advocate conditions of employment that safeguard the rights and welfare of all employees of our institutions. 6. We do not advance private interests at the	

Code of Ethics	Year of Adoption	Years of Amendments	Main Points Discussed in Codes of Ethics	Remarks
			expense of library users, colleagues, or our employing institutions. 7. We distinguish between our personal convictions and professional duties and do not allow our personal beliefs to interfere with fair representation of the aims of our institutions or the provision of access to their information resources. 8. We strive for excellence in the profession by maintaining and enhancing our knowledge and skills, by encouraging the professional development of co-workers, and by fostering the aspirations of potential members of the profession. American Library Association (2017)	
ALIA	1986	1997, 2014, 2018, 2020	1. All Members of ALIA are required to support the Objects of the Association. 2. All Members of ALIA are required to support the Association's core values **2.1 Promotion of the free flow of information and ideas through open access to recorded knowledge, information, and creative works** **2.2 Delivery of authentic information and evidence-based practice supported by quality research** 3. Members are encouraged to promote library and information professions, institutions, and the sector by: Australian Library and Information Association, (2020).	Censorship is not mentioned clearly under this code of ethics.

Code of Ethics	Year of Adoption	Years of Amendments	Main Points Discussed in Codes of Ethics	Remarks
CLA	1976	1983, 1985, 2015	1. Support and implement the principles and practices embodied in the current Canadian Library Association Statement on Intellectual Freedom. 2. Make every effort to promote and maintain the highest possible range and standards of library service to all segments of Canadian society. **3. Facilitate access to any or all sources of information which may be of assistance to library users.** 4. Protect the privacy and dignity of library users and staff. Canadian Library Association (1976)	Canadian Library Association Statement on Intellectual Freedom and Libraries, June 27, 1974, Amended 1983, 1985, 2015 (Canadian Library Association.1976). Censorship is not mentioned clearly under this code of ethics.
IFLA	2012	2019	**1. Access to Information** 2. Responsibilities towards individuals and society 3. Privacy, secrecy and transparency **4. Open access and intellectual property** 5. Neutrality, personal integrity, and professional skills 6. Colleague and employer/employee relationship	IFLA statement of Censorship. Agreed by the IFLA Committee, 16 August 2019. This document talks about: *"**Censorship and human rights**: It cites five articles of the Universal Declaration of Human Rights that support the right to freedom of expression and access to information."* **IFLA documents on intellectual freedom: It summarizes the main points of several IFLA statements and principles that advocate for libraries and librarians to oppose censorship and ensure free and unlimited access to knowledge and information for all.** *"**Examples of censorship in practice**: It provides a list of specific acts, and ongoing trials considered problematic or ambiguous forms of censorship, such as book burning, Internet filtering, fake news, right to be forgotten, hate speech, etc.* .

Code of Ethics	Year of Adoption	Years of Amendments	Main Points discussed in the Code of Ethics	Remarks
SLLA	1998	2015	1. **Responsibility to the Community and Users** 2. Responsibilities to the Profession and Practices 3. Responsibilities to the Professional Body - Sri Lanka Library Association Sri Lanka Library Association, (1997).	Under 1st point: **<u>1.3. Shall have an obligation towards facilitating the free flow of information and ideas and to protect and promote the rights of every individual to have free and equal access to sources of information, without discrimination, and within the limits of the law.</u>** *1.4. "Shall encourage the free flow of information and protect against the unlawful withholding of information and the imposition of censorship."* Sri Lanka Library Association, (1997).

Note: *Intellectual freedom is Bold and underlined. Censorship is Italic and quoted in the table.

Importance of Code of Ethics to the Library Profession

Creating and sustaining a professional image is a challenging endeavour, not something achieved quickly or effortlessly. It's a substantial undertaking and a process that demands a collaborative effort from all individuals representing the professional organization (Weerasooriya, 2016). Most professional bodies try to develop a code of ethics to upgrade their profession up to high stranded. Medical practitioners, lawyers, journalists, engineers, educators and businesses, among other professional entities, establish standards to govern and conduct their respective professions, with the goal of establishing a reputable image (Verma & Shahane, 2018).

The American Library Association described the importance of codes of ethics such as codifying and making known to the profession and the general public, the ethical principles that guide the work of librarians, other professionals in providing information services, library trustees and library staffs (American Library Association, 2021). Further, the ALA highlighted the function of the code of ethics as serving ethical principles guiding librarians and information service professionals. At the same time codes of ethics support decision-making purposes (American Library Association, 2021). Besides IFLA Code of Ethics for

Librarians and Information Workers presents ethical propositions to guide individuals in these roles and offers considerations for library and information associations when establishing or revising their codes. The codes of ethics conduct offer a series of ethical propositions for the guidance of individual librarians and information workers (International Federation of Library Associations and Institutions, 2012). Accordingly, it is mentioned the value of codes of ethics for librarians and information workers. IFLA explains that codes of ethics function to encourage reflection on principles, inform policy development, assist in handling dilemmas, enhance professional self-awareness, and provide transparency to users and society in general. (Federation of Library Association and Institutions, 2012; Sri Lanka Library Association, 2015). These codes of ethics are very important to library professionals as service providers.

Considering all sample codes of ethics, ALA, ALIA, CLA, IFLA and SLLA play a vital role in guiding ethical conduct, enhancing professionalism, fostering user trust, protecting intellectual freedom, fulfilling social responsibilities, ensuring professional accountability, addressing emerging challenges, aligning with legal requirements, promoting international collaboration and promoting ethical behaviour within the library and information science profession. These are the importance of a code of ethics for the library profession shown in the literature.

Importance of Intellectual Freedom and Censorship on Codes of Ethics

Importance of Intellectual Freedom

Librarians and library professionals are fundamental service providers whose primary goal is to meet the information needs of their users efficiently and effectively. Similarly, libraries serve as repositories of knowledge and information, safeguarding and curating valuable resources for their user communities. Throughout history, intellectual freedom has been a persistent concern, underscoring its fundamental relevance to the profession. Intellectual freedom is essential for the development and maintenance of ethical codes in all aspects for several reasons. Most of the time, intellectual freedom encourages the expression of diverse ideas and perspectives, ethical decision making and critical thinking. Consequently, intellectual freedom has evolved into core professional values.

Importance of Censorship

Librarians as information professionals, try to provide access for users to information sources without any barriers. In fulfilling this role, they also struggle with ethical

considerations related to the creation, storage, management, usage and distribution of information among their user community. Therefore, censorship holds significant importance within the library profession. As service providers, librarians have a responsibility to offer unrestricted access to information and resources, devoid of bias or limitations. Censorship concerns such as book banning, internet censorship, political censorship, film and media censorship, artistic censorship and self-censorship are very important censorship practices that vary from country to country and society to society. Therefore, it is very important to discuss these things in the LIS professions' code of ethics.

Intellectual freedom and censorship issues lie at the heart of the mission and values of the library and information science profession. Codes of ethics embody these values and offer guidance to library professionals on how to uphold the principles of intellectual freedom, resist censorship, and promote the free exchange of ideas and information in their daily work.

Intellectual Freedom and Censorship in the Selected Codes of Ethics

The American Library Association's Code of Ethics serves as a set of guidelines for librarians and professionals to follow when it comes to ethics. One of its main principles was intellectual freedom, which was closely linked to the ideas of censorship. This principle emphasized the importance of allowing people to access a wide variety of materials and engage in open discussions. The ALA Code also highlighted the responsibilities of librarians and all library professionals such as giving people access to information, opposing censorship, supporting education, and advocating for policies that protect Intellectual Freedom. ALA mentioned in their Code of Ethics "We are members of a profession explicitly committed to intellectual freedom and the freedom of access to information. We have a special obligation to ensure the free flow of information and ideas to present and future generations." (American Library Association, 2021). According to the Intellectual Manual 7th edition, the ALA code mentioned:

> "Intellectual freedom can exist only where two essential conditions are met: first, that all individuals have the right to hold any belief on any subject and to convey their ideas in any form they deem appropriate, and second, that society makes an equal commitment to the right of unrestricted access to information and ideas regardless of the communication medium used, the content of work, and the viewpoints of both the author and the receiver of information" (American Library Association, 2021).

Table 1 explains how the ALA Code addresses intellectual freedom and censorship. The ALA Code of Ethics emphasizes intellectual freedom, which includes the free expression of ideas and unrestricted access to information, regardless of medium, content, or viewpoints. It does not consider the medium, content, or viewpoints of the information in question when upholding these principles.

The Australian Library and Information Association has highlighted the importance of intellectual freedom and censorship in the second point of their statement (See Table 1, ALIA 2.1 and 2.2). ALIA supported the principle of intellectual freedom, which means that individuals should have the right to access and share ideas, information and knowledge without unnecessary limitations or censorship. Additionally, ALIA is dedicated to promoting the unrestricted exchange of information and ideas and is highlighted in the code of ethics such as "to promote the free flow of information and ideas in the interest of all Australians and a thriving culture, economy, environment, and democracy, as well as to promote and enhance the services provided by all kinds of library and information agencies" (Australian Library and Information Association, 2014). This also includes advocating for open access to recorded knowledge, information and creative works. The association also emphasized the significance of providing accurate information and supporting practices that are based on evidence.

Code of ethics position statement by the Canadian Library Association (1976) emphasized four core values for library professionals, with the third value focusing on intellectual freedom and censorship (See Table 1, CLA 3). This highlighted CLA's commitment to ensuring that library users have easy access to a wide range of information sources, promoting open sharing of ideas and knowledge, while also advocating for the fundamental principles of intellectual freedom.

The International Federation of Library Associations and Institutions addressed the critical issue of censorship and its connection to human rights. They followed key articles from the Universal Declaration of Human Rights (1948), emphasizing freedom of expression and access to information. IFLA summarized key points from its statements that oppose censorship and support intellectual freedom. Points 1 and 4 of the IFLA Code of Ethics described this very clearly (See Table 1, IFLA 1, 4). They provided real-world examples of censorship, such as book banning, Internet filtering, fake news, and hate speech (IFLA Statement on Censorship, 2019). IFLA strongly endorsed intellectual freedom and condemned censorship, drawing inspiration from the Universal Declaration of Human Rights. Further, the Universal Declaration of Human Rights noted that; "everyone has the right to

freedom of opinion and expression; the right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers" (International Federation of Library Associations and Institutions, 2019). The statement evaluated libraries' responsibility to protect intellectual freedom, encourage open access, and ensure privacy. A compilation of significant IFLA statements highlighted the organization's commitment to fighting censorship and promoting unrestricted access to knowledge as mentioned: "Librarians and other information workers promote and publicize their collection and services" (International Federation of Library Associations and Institutions, 2019). Overall, the documents highlighted the intersection of censorship, human rights, and intellectual freedom, emphasizing the role of libraries in upholding these principles.

The Code of Professional Conduct and Ethics of Sri Lanka Library Association (1997) strongly opposed hiding information and censorship. The code prioritized ensuring access to information for all individuals, regardless of language, caste, ethnicity, religion, medium, or social disadvantage. The revised Code of Professional Conduct and Ethics outlined three core areas: responsibility for society, responsibility for the profession and responsibility to the professional association. Under the responsible for society core area, the code emphasizes the duty of library professionals to uphold freedom of access to information (Sri Lanka Library Association, 2015). Further, it specifically outlined the responsibility of ensuring users' right to access information. This revised amendment noted that the core mission of the members of the association is to ensure the best possible access to information required by users and librarians and information managers should employ the most effective and efficient ways to make materials and information accessible to all requiring it.

The code marked the mission of association members to facilitate optimal access to information. SLLA explained how to conduct the promotion of resources and services, and responsibilities towards the users and society. Point 4.1.2 of the code of ethics explains Library professionals should introduce awareness strategies appropriate to the user community of a particular library service and ensure minimum barriers to access information. The below points describe how SLLA paid attention to censorship and access to information.

> "4.1.2.1 Members shall have an obligation towards facilitating the free flow of information and ideas and protecting and promoting the rights of every individual to have unfettered and equal access to the information that they require.

4.1.2.2 Members shall protect the unlawful withholding of information and the imposition of censorship.

4.1.2.3. Librarians and information managers should ensure accessibility about the medium and the format by the user community with special attention to the information needs of differently-abed users" (Sri Lanka Library Association, 2015).

Anyhow, the SLLA Code of Ethics is highly supported for the free-flow of information and access to information without any limitations.

Similarities and Differences in Statements in Intellectual Freedom and Censorship

In comparison with the ALA, ALIA, CLA, IFLA, and SLLA codes of ethics, there were five major similarities that can be identified. These include intellectual freedom, resistance to censorship, handling challenged materials, promoting open access, and emphasizing professional responsibility. These highlighted points demonstrate that all five organizations are united in their commitment to intellectual freedom and opposition to censorship (See Table 1). Furthermore, they believe that individuals should have the right to read or access all information materials without barriers. In the code of ethics, the words "access to free flow information, open access, freedom of access information" were used to describe the open access facility for users. Additionally, these five codes of ethics highlighted and recognized the major responsibilities of librarians as service providers. Most of the time the word "librarians as service providers" was used to explain the responsibility that they have.

While all these library associations share a commitment to intellectual freedom and resistance against censorship, their codes of ethics may reflect regional, cultural, and professional differences, as well as specific challenges related to these issues in their respective domains. For example, ALIA and CLA have included Australian and Canadian-specific issues and challenges regarding intellectual freedom and censorship. Notably, CLA has included Canadian laws and regulations related to freedom of expression and censorship. Specifically, SLLA has highlighted intellectual freedom and censorship as industrial and professional issues. The SLLA code of ethics is paid their attention to the library profession in Sri Lanka and addresses several unique challenges, cultural considerations, and issues specific to libraries in Sri Lankan contexts. Compared to the ALA code of ethics, it has a broader international scope and is designed to guide library professionals in the United States.

However, the core principles of defending intellectual freedom and opposing censorship remain consistent across these codes.

Conclusion

Code of ethics of library Associations like ALA, ALIA, CLA, IFLA, and SLLA, guided librarians and information professionals. These codes serve as vital tools for fostering professionalism, building trust with users, protecting intellectual freedom, ensuring accountability, and addressing evolving challenges within the library profession. Intellectual freedom and resistance against censorship play a vital role in the code of ethics. While these codes have notable similarities, including commitments to intellectual freedom, censorship resistance, handling challenged materials, promoting open access, and emphasizing professional responsibility, they also accommodate regional, cultural, and professional variations to address specific issues and challenges unique to their respective contexts. Having a Code of Ethics for any library association is more beneficial for the profession.

Recommendations

Recommendations emerge based on the common ideas in these codes. IFLA Code of Ethics describes the need for information for users “for personal development, education, cultural education, cultural enrichment, leisure, economic activity and informed participation in and enhancement of democracy” (International Federation of Library Associations and Institutions, 2012) and also that access to collections and services must be free of charge. This thing can be added to the SLLA code of ethics. Sometimes, the SLLA code of ethics can be defined based on the laws and regulations of the government of Sri Lanka.

By maintaining an ongoing dialogue and fostering collaboration, library associations can enhance the robustness of their ethical guidelines. These guidelines should possess the flexibility to adapt to emerging challenges, especially in the realm of technology and digital information. Through their collective commitment to upholding intellectual freedom and resisting censorship, these associations will play a pivotal role in ensuring that libraries remain steadfast havens where the principles of knowledge and free expression flourish. Their persistent dedication to these fundamental values will preserve libraries as vital institutions that contribute to the enrichment of society, serving as enduring bastions of learning and open discourse.

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ONLINE RESEARCH VISIBILITY PLATFORMS USAGE AMONG LIBRARY ACADEMICS AND LIS LECTURERS IN SRI LANKAN UNIVERSITIES

M. P. P. Dilhani [1]

Abstract

This study focuses on the efficient use of online platforms to enhance research paper visibility, benefiting researchers and library academics. It aims to contribute to the existing literature and provide practical recommendations based on the experiences of academic librarians and LIS lecturers in Sri Lankan universities. The objective of the study should be clear. A study was conducted with nineteen university libraries, and one campus eight institutes, and two LIS teaching institutes and departments attached to the university in Sri Lanka, achieving a 51% response rate. The questionnaire was administered and validated, and the data collected from open-ended questions were coded and analyzed using frequency analysis, tabulation, and graphic presentation. The findings indicate that academic librarians in Sri Lankan universities widely use platforms such as ResearchGate, ORCID, and Google Scholar. However, participation on platforms like SSRN and SCOPUS is less common. To increase inclusivity and comprehensive representation of scholarly work, the study suggests raising awareness and encouraging academic librarians to establish profiles on such platforms. The study also reveals several benefits of having an online platform profile, including enhancing institutional reputation, increasing author recognition, influencing institutional ranking, expanding readership, reaching a broader audience, and potentially attracting research awards. These findings highlight the significant impact online platforms can have on an author's professional status and work visibility. This study provides insights into the usage of online platforms by library academics in Sri Lankan universities to enhance research paper visibility. It offers recommendations to encourage academic librarians to establish profiles on various platforms, thereby increasing the visibility and influence of their scholarly work.

Keywords: *Academic integrity, Academic librarians, Sri Lankan universities, Online platforms, Research paper visibility, Academics in library and information science teaching*

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Introduction

In an unprecedented digitalizing world, online platforms have become essential for the visibility and dissemination of research outputs. This pertains to the library academics and academics in Library and Information Science (LIS) teaching, who play a pivotal role in supporting the research endeavours of universities in Sri Lanka. Research paper visibility denotes the degree to which a research paper can be easily accessed, discovered and effectively disseminated to its intended audience. It encompasses various strategies employed to enhance the prominence and influence of a research paper both within the scientific community and in broader contexts. The significance of research paper visibility lies in its role in determining the extent to which the paper is read, cited and utilized by other researchers, policymakers and stakeholders. By increasing the visibility of a research paper, its potential impact and reach can be expanded, fostering greater scientific collaboration and informing policy decisions. The effective utilization of online platforms holds immense potential for enhancing the visibility of research papers, benefiting both researchers and library academics. Their effective utilization of online platforms can enhance the visibility of research papers, ultimately facilitating knowledge sharing and collaboration within and beyond the university community.

Several international studies have demonstrated the benefits of online platforms in enhancing research visibility. For example, Marín-González et al. (2017) and Tripathy et al. (2017) emphasized the role of online platforms in increasing visibility and impact. Open-access publications aim to disseminate research findings without financial barriers. Intellectual property issues, rising prices and financial constraints pose challenges but the benefits of open access are significant. The enthusiasm of researchers, particularly in developing countries, continues to drive the success of open-access initiatives (Bashorun et al., 2013). While these international studies provide valuable insights, there is a lack of dedicated research in the Sri Lankan context. Therefore, local studies are needed to investigate the usage of online platforms by library academics and LIS lecturers in Sri Lankan universities. For instance, studies could explore the awareness, adoption and challenges faced by them concerning the utilization of online platforms to enhance research paper visibility. Additionally, the impact of such utilization on research collaboration, networking and identification within the Sri Lankan research community can be assessed. A few existing studies have explored the role of online platforms in research dissemination and networking among academics in different contexts. There exists limited awareness and misconceptions about open-access publishing, as evidenced by low awareness levels among

faculty and stakeholders at the University of West Indies in Trinidad and Nigeria. For example, a lecturer faced criticism for publishing in an open-access journal due to a misunderstanding about payment processes. Effective advocacy and promotion are crucial for the successful implementation of the open-access movement, especially considering the resistance of academics accustomed to traditional publishing practices. Onyancha (2015) revealed academic scholarly networks, particularly ResearchGate, has become a vital platform for researchers to enhance their networks and share their work. This article focused on ResearchGate's impact on the visibility and influence of South African universities. The results indicated that top-ranked universities in South Africa have embraced social media and showed a strong correlation between ResearchGate and Web of Science (WoS) citation statistics. Subject librarians in academic libraries should also play a key role in directing users toward open access resources, including institutional repositories (Jain, 2012).Although these studies provide valuable insights into the broader context, there is a need for similar studies focusing on the specific challenges and opportunities faced by academic librarians as well as LIS lecturers in Sri Lankan universities. The involvement of library academics in research support services and their engagement with online platforms have been acknowledged in various studies. The study Repanovici (2010) explores the use of authors' impact analysis and citations as assessment tools in Romanian universities and study recommended using Google Scholar and the h-index obtained through Publish or Perish tool for evaluating scientific research. Also, study emphasized the importance of open access publications and propose the creation of a digital repository in Romania. However, such studies were not conducted in the Sri Lankan context. Therefore, conducting studies explicitly focusing on the utilization of online platforms by library academics and LIS lecturers in Sri Lankan universities can provide valuable insights into their practices, challenges and opportunities. This research can contribute to enhancing research paper visibility, facilitating knowledge-sharing, and improving research support services in Sri Lanka's academic community.

Based on the literature review, ResearchGate is an academic social networking site that facilitates research visibility, collaboration, and networking among academics. It allows researchers to create profiles, share research papers, ask and answer questions, and connect with other researchers. Academia.edu is another academic social networking site that aims to increase the visibility and impact of research. It provides a platform for researchers to share their papers, collaborate with peers and discover relevant research. ORCID iD is a unique digital identifier for researchers that helps improve research visibility and identification. It

provides researchers with a persistent digital identifier, which distinguishes them from others and ensures proper attribution of their work. Google Scholar is a widely used academic search engine that indexes scholarly literature from various disciplines. It provides researchers with a platform to search for articles, papers, theses and books, increasing the visibility of research outputs. These platforms play significant roles in enhancing research paper visibility, knowledge sharing, collaboration and networking among researchers.

While existing literature provides valuable insights into research paper visibility and the role of library academics, there need to be more studies explicitly focusing on utilizing online platforms by academic in the LIS fields of Sri Lankan universities Therefore, this research aims to investigate the current practices, challenges and opportunities regarding using online platforms for research paper visibility by LIS academics in Sri Lankan universities. By understanding their perspectives and experiences, this study seeks to provide recommendations for improving research visibility and fostering a supportive environment for knowledge dissemination within the university community. The effective utilization of online platforms holds immense potential for enhancing the visibility of research papers, benefiting both researchers and library academics. By exploring the experiences and perspectives of academic community in LIS within the Sri Lankan university context, this research aims to contribute to the existing literature and provide practical recommendations for enhancing research paper visibility through online platforms.

Despite the increasing emphasis on research visibility and the availability of online platforms, there needs to be a more comprehensive understanding of the current practices, challenges and opportunities related to using these platforms to enhance the visibility of research papers among library academics and academics in LIS teaching in universities in Sri Lanka.

LIS Related Academics Attached to Sri Lankan Universities

The government of Sri Lanka - granted faculty status for academic librarians with parity in pay and other service benefits of teaching faculty. The Universities Act, No. 16, (1978), Section 79 of Sri Lanka states that librarians are deemed to be ‘teachers’ in all aspects. The specific part of the Act which deals with the ‘appointments of the staff’ states that “in this part ‘teacher’ shall be deemed to include Librarian, Deputy Librarian, Senior Assistant Librarian and Assistant Librarian (Universities Act (1978), Section 79). Subsequently, in 1973, the Department of Library and Information Science (DLISC) was established at the University of Kelaniya (UoK) under the Faculty of Social Sciences. The

National Institute of Library and Information Sciences was founded according to the Ordinance published in 1999 under Sections 18 and 24 of the Universities Act No. 16 of 1978 as an institution affiliated with the University of Colombo (UoC). Thus, the Librarian was considered and an Academic in the university and higher degree institutes. Further, with the recognition of the Department and the National Institute of Library and Information Sciences (NILIS), the designations such as Senior Professor, Associate Professor, Senior Lecturer, and Lecturer included in the field of library and information science.

Objectives

Main objective of the study is to examine the usage of online platforms by LIS related academics in Sri Lankan universities.

The specific objectives of the study were:

1. To determine the percentage of LIS related academics who have profiles on online platforms.
2. To identify the awareness of LIS related academics on perceived benefits of having a profile on online platforms
3. To investigate the issues associated with creating a profile on online platforms for LIS related academics in Sri Lankan universities.
4. To provide recommendations and strategies to effectively utilize online platforms for improving research material's visibility for LIS related academics in Sri Lankan universities.

Methodology

This study was carried out as a descriptive study. Thus, the present study used the term “Library academics and Academics in Library and Information Science teaching” for the target population.

The study included all academic librarians working in university libraries as well as teaching staff attached to DLIS and NILIS. However, researcher used Directory of the University Librarians Association (ULA) 2022 for get the sample size those who have taken membership in ULA to distribute the questionnaire. Based on the ULA Membership Directory 2022, nineteen 19 university libraries and 1 campus and 9 institutes and LIS teaching institute and 1 academic department attached to a university could be found. Accordingly, the targeted population consists of 163 library academics in universities, institutes, campuses. It was targeted to include 163 library academics and academics in

Library and Information Science teaching as a sample of the study based on the ULA Directory 2022 (Table 1). The non-members of the University Librarians Association of Sri Lanka were excluded.

Table 1: University Librarians and Academics Related to LIS

Categories	Entire Population	%
Librarian	10	5.81
Deputy Librarian	10	5.81
Senior Assistant Librarian Grade I and II	97	56.39
Assistant Librarian	39	22.67
Senior Professor	02	1.16
Senior Lecturer Grade I and II	11	6.39
Probationary Lecturer (unconfirmed)	03	1.74
Temporary Lecturer	04	2.32
Total	172	100

A questionnaire was developed and validated through a pilot study. The reliability index calculated based on Cronbach's α of the questionnaire was >= 0.70 which established the reliability of the questionnaire. Subsequently, the questionnaire was converted to a Google Form and dispensed to 163 members. Data collection was conducted from 12th July 2023 to 31st July 2023. The collected quantitative data were subjected to frequency analysis and results were tabulated and graphically presented whenever suitable. The qualitative data were coded, classified under similar themes and ranked.

Results

Out of 163 responders, 83 responded to the survey and thus the response rate of the questionnaire was 51%. Affiliation-wise respondence is presented in Table 2. According to Table 2, significant proportion of the respondents were affiliated University of Colombo (12%), University of Peradeniya (12%) and University of Ruhuna (12%). These results provide valuable insights into the distribution of survey participants among different academic institutions and highlight the varying levels of involvement in the research.

The distribution of the respondents based on their respective designations is shown in Table 3. Out of 83 respondents, 22.89% were Assistant Librarians and the majority 61.45% held the designation of Senior Assistant Librarians.

Table 2: Affiliation-wise Respondence

University/Institute	Frequency	Percent %
Eastern University	5	6.0
Gampaha Wickramarachchi University of Indigenous Medicine	2	2.4
Open University of Sri Lanka	3	3.6
Postgraduate Institute of Medicine	2	2.4
Postgraduate Institute of Indigenous Medicine	1	1.2
Rajarata University of Sri Lanka	3	3.6
Sabaragamuwa University	4	4.8
Sir John Kotelawala Defence University	4	4.8
South Eastern University	2	2.4
Swami Vipulananda Institute of Aesthetic Studies	1	1.2
University of Colombo	10	12.0
University of Jaffna	2	6.0
University of Kelaniya	8	9.6
University of Moratuwa	5	6.0
University of Peradeniya	10	12.0
University of Ruhuna	10	12.0
University of Sri Jayewardenepura	7	8.4
University of the Visual and Performing Arts	1	1.2
Uva Wellassa University	1	1.2
Wayamba University of Sri Lanka	2	2.4
Total	83	100

Table 3: Designation-wise Respondence

Designation	Frequency	%
Librarian	3	3.61
Acting Librarian	3	3.61
Deputy Librarian	4	4.82
Senior Lecturer	3	3.61
Senior Assistant Librarian	51	61.45
Assistant Librarian	19	22.89
Total	83	100

Profiles in Online Platforms

Respondents were asked to indicate the online platforms on which they have created profiles. The summary presented in Figure 1 indicates that the majority (16.9%) have profiles on Google Scholar, ResearchGate, and ORCID. They are followed by 15.7% respondents who have profiles on Google Scholar, ResearchGate, ORCID, LinkedIn, and Academia.edu. Figure 1 also depicts wide range of platforms utilized by respondents for their academic and research activities. Google Scholar and ResearchGate are the most prevalent choices. In addition, the results revealed that respondents use various combinations of platforms, indicating their simultaneous use of multiple platforms. According to Abba and Anene (2022), in scientific communication, the sharing of research findings does not end with publication; instead, it initiates a critical phase - the dissemination and impact of the work. The traditional role of libraries, which aimed to spread knowledge, has yet to be surpassed by emerging avenues that were once inconceivable. These include popular social media platforms, dedicated scientific networks tailored for researchers, and institutional repositories. These options offer extensive possibilities for research to circulate and gain visibility without being confined by physical limitations.

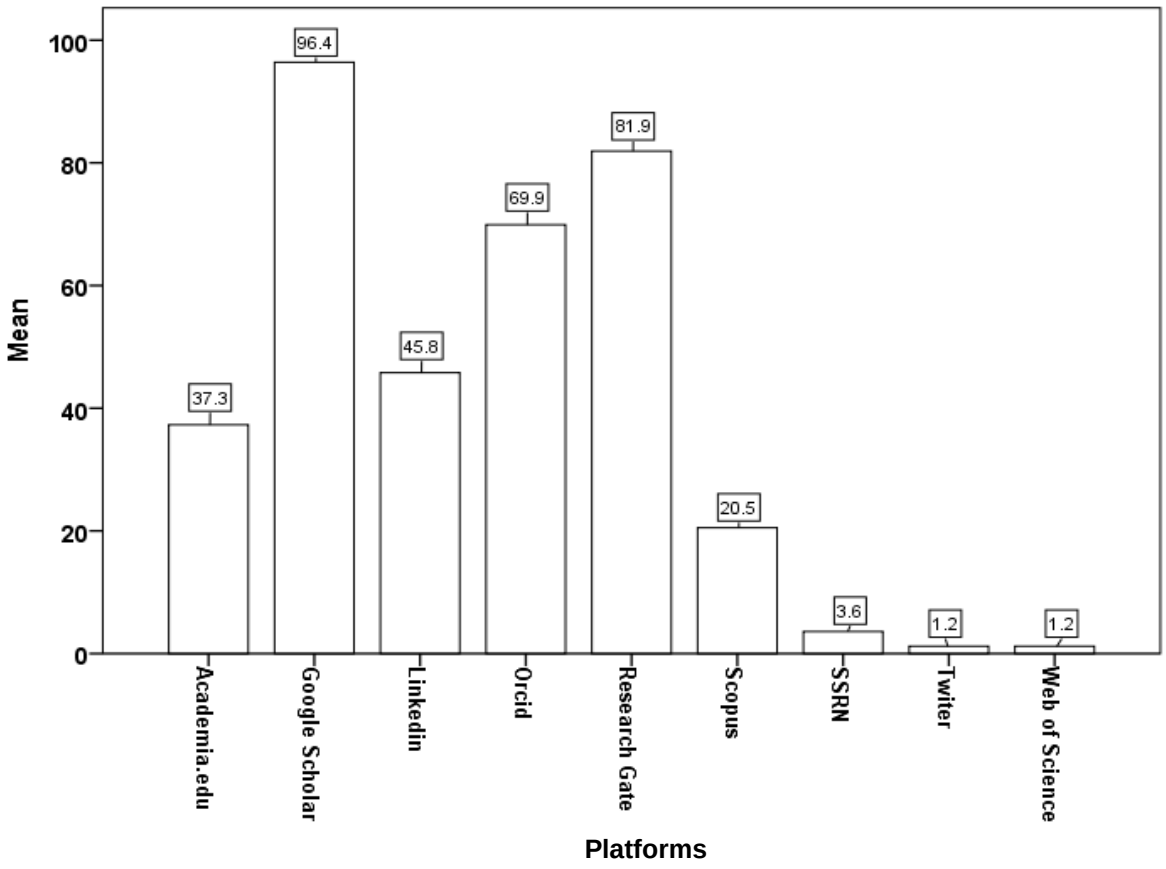

Figure 1. Usage of Online Platforms by Respondents.

Awareness of the Perceived Benefits of Online Platforms

The responses received for LIS academics' awareness of the perceived benefits of online platforms are summarized and presented in Table 4 which highlights the perceived benefits of having a profile on online platforms.

Table 4: Awareness of the Perceived Benefits of Online Platforms of LIS Academics.

Indicator	N	Mean	Std. Deviation (SD)
It raises the profile of the author's institution	56	3.80	1.227
Brings recognition to the author	83	4.129	1.0555
It influences authors' institutional ranking	83	3.976	1.2438
It increases the readership of the papers	83	4.329	0.7136
It attracts possible research funding	83	3.482	1.3854
Positive Implication for authors' Career Salary awards	83	3.541	1.4764

The mean values of a dataset represent the central tendency or average of a set of values, while the standard deviation is a statistical measure that quantifies the dispersion or spread of the dataset (Weiss & Weiss, 2017). Since the mean value indicates the average score for each indicator, which ranges from 1 to 5 and reflects indicator's tendency of disagreement/agreement. The table shows highest tendency indicators towards agreement such as "It increases the readership of the papers" (Mean =4.329, SD = 0.7136), "Brings recognition to the author" (Mean =4.129, SD = 1.0555) while shows moderate tendency indicators towards agreement such as "It raises the profile of the author's institution" (Mean =3.80, SD = 1.227), "It influences authors' institutional ranking" (Mean=3.976, σ = 1.2438), "Positive Implication for authors' Career Salary awards" (Mean =3.541, Sd = 1.4764). The results shows the lowest tendency indicators towards agreement as "It attracts possible research funding" (Mean =3.541, SD = 1.4764)

Factors Affecting the Creation of Online Platforms

Table 5 indicates the tendency of factors affecting the creation of online platforms by the library academics and their negative impacts to avoid from that. The results shows highly disagreement tendency about the indicators "No Gmail (Mean = 1.800, Sd =1.4209), "Too busy to create my profile" (μ = 2.118, σ =1.5385), "Don't know how to create a profile on these platforms" (Mean = 2.271, SD =2.271) and "No motivation from the institution" (M = 2.435, Sd =1.6290) while moderate tendency of indicator such as some academics are not interested (Mean = 3.318, SD =1.4574).

Table 5: Factors Affecting the Creation of Online Platforms

Indicator	N	Mean	Std. Deviation
No Gmail	83	1.800	1.4209
Some academics are not interested	83	3.318	1.4574
Don’t know how to create a profile on these platforms	83	2.271	2.271
No motivation from the institution	83	2.435	1.6290
Too busy to create my profile	83	2.118	1.5385
Network challenges	83	2.365	1.5800
No institutional email	83	2.259	1.6121

Thematic Analysis

During the collection of qualitative data, respondents were asked to suggest their opinions on making academic papers effectively accessible. The responses were finally categorized into seven themes as follows:

1. Journal selection: The possibility of visibility is increased by submitting a manuscript to a reputed journal with a high impact factor. Researchers and other industry experts frequently pay more attention to journals that have a large audience and a solid reputation.
2. Open access publishing: By removing access restrictions and boosting awareness, open access publications make research freely available to everyone with internet access. Open-access journals are more likely to be seen by more people and cited more frequently.
3. Search engine optimization: Increasing a paper's exposure in search results involves optimizing it for search engines. Researchers can accomplish this by utilizing pertinent keywords, descriptive and clear titles, abstracts, and relevant information. This makes the paper easier for academics looking for similar information to find.
4. Research networking sites: Research networking sites like Academia.edu and ResearchGate are good places to upload papers to increase visibility. Through these platforms, researchers can disseminate their work, collaborate with other academics, and interact with other researchers, which improves their chances of receiving more attention and citations.

5. Social media engagement: Research paper visibility can be increased by promoting them on scholarly social media sites like Twitter or LinkedIn. Researchers can publish links to their publications, write concise summaries, and interact with colleagues to spread their work to a broader audience.
6. Citations and references: A paper's exposure and influence are strongly correlated with the number of citations it receives. Researchers can actively engage with the literature by ensuring their work includes references to significant and pertinent studies and forming partnerships with active authors in their study field.
7. Institutional repositories: The repository offers a reliable platform for research dissemination. Also, it can obtain an international reputation and higher standards through effective management and increased awareness, while also enhancing the exposure of its institution. Contributing publications to repositories run by academic institutions or other research organizations might increase their visibility. These archives facilitate the public sharing of research while making research papers freely accessible to those within the institution.

Accordingly, 56% respondents mentioned: journal selection, open access publishing, citations and references and institutional repositories were the best practices to increase research visibility: Of 24% respondents suggested that journal selection, open access publishing, search engine optimization, research networking sites, social media engagement are some of the best practices to increase the visibility of one's research paper; 12% of the respondents suggested that they need more training belongs to research integrity; 8% of respondents mentioned that they have "No Idea" regarding the opinions on making academic papers effectively accessible.

Discussion

Most respondents have joined the ResearchGate network and built profiles on Google Scholar, ORCID was the platform with the fewest profiles. Therefore, it would be necessary to make efforts to raise awareness about ORCID among the academic community. Also, the majority of respondents concur that having a profile on online platforms enhances the reputation of the author's institution, increases author recognition, influences institution ranking, boosts readership of the paper or papers, expands the audience for articles and draws potential research awards. The thematic analysis showed that approaches to increase the visibility of one's article included publishing open access, setting up a Google Scholar profile,

joining the ResearchGate network, and publishing in journals that are indexed and abstracted. Making public profiles on these sites would improve academic evaluation and give more weight to papers with a worldwide audience.

The findings derived from the analysis of data presented in Table 4 and Table 5 provide valuable insights into the extent of library academics' awareness regarding the perceived benefits of online platforms, as well as the factors that influence their creation. It becomes evident from the tendency levels exhibited in Table 4 that LIS academics hold a strong belief in the notion that joining research visibility platforms can significantly enhance the readership of their published work. Moreover, they are convinced that the establishment of visibility platform profiles is instrumental in garnering exceptional recognition for their professional endeavors. In addition, these profiles are seen as powerful tools for elevating institutional rankings and enhancing the overall reputation of the authors' respective institutions.

The comparison of the mean value (Grand mean = 23.257/6, Mean ≈ 3.876) encompassing the six indicators suggests that professionals in the field of LIS are well aware of the paramount importance of online visibility for their research outputs. These findings strongly indicate that academic librarians acknowledge the substantial benefits associated with maintaining a presence on online platforms, with heightened readership of papers and increased recognition being the primary drivers of this perception.

Furthermore, based on the detailed analysis presented in Table 5, it can be inferred that numerous influential factors act as deterrents for academic librarians when it comes to creating online research visibility profiles. This inference is drawn based on the observation that the tendency levels reported for these factors predominantly fall below the value of 4, indicative of a lack of endorsement or agreement. This signifies that scholars in the LIS domain have not fully embraced the utilization of these platforms due to the perceived discouragement stemming from these factors. This observation is further reinforced by the consideration of the overall mean values of the seven indicators (Grand mean = 16.566/7, Mean ≈ 2.366) having very less number opposed to the level of agreement number 4. Also, Table 6 revealed that it is important for universities and institutions to be aware of these factors and address them accordingly in order to promote and encourage participation in online platform creation for research dissemination. Thematic analysis indicated numerous methods for increasing the visibility of research articles, including open-access publishing, building a Google Scholar profile, joining the ResearchGate, and targeting indexed and

abstracted journals. Adopting these strategies improves academic evaluation and gives more weight to publications having a global readership.

Conclusion

In conclusion, the outcomes of this study emphasize the importance of online platforms, particularly ResearchGate, ORCID and Google Scholar, in facilitating scholarly networking and collaboration. Additionally, raising awareness about platforms like LinkedIn and Academia.edu addressing the factors that hinder participation will further enhance academic evaluation and global readership, ultimately advancing knowledge dissemination across the research community. The study also reveals that academic librarians recognize the numerous benefits associated with having a profile on online platforms. They acknowledge that such profiles enhance the reputation of their institutions, increase author recognition, influence institutional ranking, boost readership of their papers, expand the audience for their articles and potentially attract research awards. These platforms offer an effective means of disseminating research outputs and establishing a global presence to reach a wider readership. Furthermore, the study also sheds light on the factors that affect the creation of online platforms among academic librarians. Universities and institutions should consider these factors, such as the absence of institutional and Google emails, lack of interest from some academics, insufficient knowledge in profile creation, lack of motivation from institutions, time constraints, and network challenges. Addressing these barriers will help promote and encourage wider participation in online platform creation for research dissemination. This research article highlighted the significant role that online platforms play in scholarly networking and collaboration among academic librarians. By increasing awareness, addressing barriers, and promoting the benefits associated with online platforms, the scholarly community can foster greater visibility, recognition, and impact of research outputs. Taken together, the aforementioned findings shed light on the perceptions and attitudes of librarians towards online platforms, highlighting their recognition of the potential benefits but also underscoring the significant hurdles that prevent their full adoption and engagement.

Recommendations

The following suggestions could be made for the library academics in Sri Lankan universities to leverage the potential of online platforms for enhancing research paper visibility:

1. Develop and implement institutional policies:
    - Establish policies that prioritize online platforms for research paper visibility.
    - Include guidelines on open-access publishing and digital repository deposits.
    - Promote online presence on academic networking sites.
2. Offer training and workshops:
    - Conduct regular training sessions for library academics.
    - Enhance their knowledge and skills in utilizing online platforms.
    - Cover topics such as open-access publishing, institutional repositories, and research promotion.
3. Create institutional repositories:
    - Establish curated repositories maintained by library departments.
    - Encourage researchers to deposit their papers and scholarly outputs.
    - Ensure easy discoverability and accessibility.
4. Advocate for open-access publishing:
    - Identify indexed journals and related publications.
    - Educate researchers about the benefits of open access.
    - Encourage publication in reputable open-access journals or depositing preprints.

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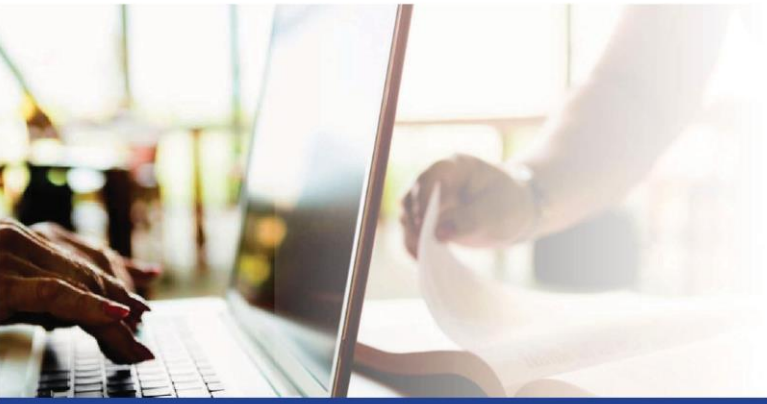

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