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Assessing the Use of Scholarly Communication Platforms in Zambia

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Abstract: This study examines the use of scholarly communication platforms in Zambia, exploring the perceptions, usage patterns and factors influencing the adoption and utilisation of these platforms among Zambian researchers and academics. Employing a cross-sectional survey design, the study gathered data from a sample of faculty members and researchers at selected universities in Zambia. The survey instrument consisted of three sections, collecting information on demographic background, scholarly communication practices in Zambia and the scholarly communication platforms used by the academic community. The findings reveal insights into the perceptions of scholarly communication services, the challenges faced by Zambian researchers in accessing and utilising scholarly resources and potential strategies to enhance scholarly communication in the country. Additionally, the study identifies the scholarly communication platforms most widely used by the Zambian academic community and the factors influencing their adoption and usage. This research contributes to the limited literature on scholarly communication in Zambia, providing valuable insights for stakeholders involved in promoting and enhancing scholarly communication practices within the country.

Keywords: academic communication; electronic communication; e-resources; scholarly communication; scholarly communication platforms; Zambia

1 Introduction

Scholarly communication is essential to research and academic work. It encompasses creating, disseminating and preserving scholarly research and information. With the rise of technology and open access publishing, scholarly communication platforms have become essential for researchers to share their work and collaborate with others. This article explores the importance of scholarly communication platforms, their benefits and some examples of popular platforms researchers use.

The Association of College and Research Libraries (2003, n.p.) defines scholarly communication as an aspect that “encompasses the creation, publication, dissemination, discovery, and preservation of scholarly research and information.” It includes formal and informal means of communicating research using peer-reviewed journals, conference presentations, monographs, blogs and social media platforms. Scholarly communication is essential for advancing knowledge, facilitating collaboration and ensuring research findings are shared with the broader community. It is, however, also undergoing significant changes due to technological innovations and the rise of open access publishing, which have prompted discussions on issues such as copyright, intellectual property and the role of commercial publishers in scholarly publishing.

Scholarly communication platforms are a centralised location for researchers to share, collaborate and disseminate their research work (Nicholas et al. 2020). They provide a means to increase the visibility of research, making it more widely accessible to their peers and the general public (Abrahams, Burke, and Mouton 2010). Scholarly communication platforms also facilitate collaboration among researchers and provide a means for feedback and peer review, ensuring the quality and reliability of the research work (Klain-Gabbay and Shoham 2016). In addition, these platforms offer researchers increased visibility, collaboration, feedback and peer review, and tools for tracking and

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monitoring the impact of research as well as helping researchers demonstrate their works' impact (Asmi and Margam 2018; Ocran and Afful-Arthur 2021; Salami et al. 2021; Shehata, Ellis, and Foster 2015).

Scholars and researchers use several platforms for scholarly communication to collaborate and share their research. Some popular platforms include ArXiv, a repository for scientific papers in physics, mathematics, computer science, quantitative biology, finance and statistics (Metelko and Maver 2023; Wong 2017); ResearchGate and Academia.edu, social networking sites for researchers and academics to connect, collaborate and share their work with others (Ovadia 2014); Mendeley, a reference management tool and academic and social network that allows researchers to organise their research and discover new research (MacMillan 2012); and Google Scholar, a search engine that provides access to scholarly literature, including articles, theses, books and conference papers (Ştirbu et al. 2015). Other platforms include Zotero, Figshare, ORCID, LinkedIn, ScienceDirect, SpringerLink, BioRxiv, medRxiv, SSRN, Open Access Button, Zenodo, Open Science Framework, OSF Preprints, GitHub, Europe PMC, Publons, Open Journal Systems, SciELO, Directory of Open Access Journals (DOAJ), PubMed Central, Crossref, Dryad, Scopus, RePEc, Semantic Scholar, Dimensions, OpenAIRE, Inspec, Web of Science, WorldCat and arXiv (Adetayo 2023; Chaleplioglou and Koulouris 2023; Nane et al. 2023; Rao et al. 2022; Shanks and Arlitsch 2016).

Objectives of the study:

- To assess scholarly communication in Zambia
- To understand perceptions of scholarly communication services in Zambia
- To analyse usage and reasons for using scholarly communication platforms in Zambia
- To identify factors influencing the adoption and usage of scholarly communication platforms in Zambia

2 Review of Literature

Scholarly communication platforms have become more prevalent in developing countries because they promote visibility, offer researchers and scholars access to various resources and facilitate cross-border collaboration. Scholarly communication provides access to vast information, including academic papers, research data and other scholarly materials. Therefore, open access is vital to scholarly works' significance in providing accessible, unrestricted access to scholarly works such as academic journals, conferences, preprint servers and online repositories that play a critical role in disseminating research findings and increasing the visibility of research. These platforms hence allow researchers to share their work

with the academic community and beyond, which can advance knowledge in their respective fields and potentially have a real-world impact. One of the primary benefits of scholarly communication platforms is the ability to increase research visibility; for example, publishing in a reputable academic journal can help establish a researcher's credibility and increase the likelihood that other scholars will cite their work (Fraser et al. 2021; Moradi and Abdi 2023). Similarly, posting preprints of papers on preprint servers helps to increase visibility and reach a wider audience before peer review and formal publication.

Additionally, scholarly communication platforms can have a significant impact on research dissemination. Conferences allow researchers to share their work with peers, receive feedback and establish collaborations (Hadad and Aharony 2023). Online repositories, such as arXiv and bioRxiv, provide researchers with a platform to share their work openly and publicly, which can help to increase the speed and efficiency of knowledge dissemination (Parks et al. 2023). For instance, according to Adam and Kaur (2022), institutional repositories have effectively boosted research visibility and citations for African scholars. Similarly, the research by McKay (2011) highlights the positive impact of open access journals on increasing the visibility of African research in specific domains such as agriculture and health.

Moreover, social media platforms have also been effective in enhancing research visibility in Africa, as highlighted by Budree, Fietkiewicz, and Lins (2019), who found that platforms like Twitter and LinkedIn are highly effective in promoting African research and increasing its visibility. Tella et al. (2013) also found that social media platforms like Facebook and Twitter effectively facilitate scholarly communication among African researchers. However, it is worth noting that only some scholarly communication platforms are created equal regarding the impact on research visibility and dissemination. Some academic journals are more prestigious than others, and publishing in a high-impact journal can significantly impact research visibility and career advancement (Eckmann and Bandrowski 2023).

One of the most popular scholarly communication platforms in developing countries is ResearchGate (Shrivastava and Mahajan 2017). ResearchGate is a social networking site designed specifically for researchers and academics. It allows them to connect with peers, share their research and collaborate on projects. ResearchGate has gained popularity in developing countries because it provides an alternative to expensive journal subscriptions and allows researchers to access information that would otherwise be difficult to obtain (Nicholas et al. 2017). Another popular platform is Academia.edu which, like ResearchGate, allows researchers to share their work and connect with others in their field. However,

Academia.edu also strongly focuses on user-generated content and encourages users to share their research and ideas. In addition to these social networking sites, open access repositories have also gained popularity in developing countries (Manca 2018). Open access repositories are digital archives allowing researchers to upload and share their work with others worldwide (Kinder-Kurlanda et al. 2017). One example of an open access repository is the Directory of Open Access Repositories (OpenDOAR), which provides a comprehensive list of repositories worldwide (Singh 2016).

Scholarly communication platforms have been instrumental in promoting academic research and collaboration across the African continent. These platforms offer African researchers and scholars the opportunity to share their work, connect with others and access funding opportunities, ultimately helping to drive innovation and progress across the continent. Some of the notable scholarly communication platforms in Africa include African Journals Online (AJOL), which provides access to African-published scholarly journals; African Virtual University (AVU), which offers distance learning opportunities to African students; Research Africa, which provides information on research funding opportunities and conferences in Africa; AfricArxiv, which offers open access to preprints of scholarly research papers; and SciDev.Net, which focuses on science and technology news in Africa. Other platforms include Eider Africa, the African Academy of Sciences (AAS), African Minds, OpenUCT and The Conversation Africa. These platforms have provided African researchers and scholars with various opportunities to collaborate, share knowledge and advance their work. They also help to bridge the knowledge gap between African researchers and their counterparts in other parts of the world, promoting international collaborations and increasing the visibility of African research; for instance, Ntim and Fombad (2021) and Tapfuma and Hoskins (2019) have cited several African universities' significant adoption and usage of Open Access Institutional Repositories. These studies reveal that these platforms have significantly impacted the visibility and accessibility of research outputs, fostering collaborations and networking among scholars and researchers within and beyond the continent. Such findings underscore the potential of scholarly communication platforms in enhancing research visibility and dissemination in African academic institutions, emphasising the need for increased investment and support to further the impact of African research on global knowledge production. In the scholarly communication landscape, Zambia is making strides with growing research and innovation investments, as evidenced by the Ministry of Higher Education and the National Science and Technology Council (United Nations Conference on Trade and Development 2022).

However, developing countries face many challenges and barriers in adopting and using scholarly communication platforms. These include technological limitations, such as limited infrastructure, access to reliable internet connectivity and electricity, incompatible technology, limited bandwidth and storage capacity. Moreover, more technical skills and adequate technical support are needed to ensure the effective adoption and usage of scholarly communication platforms in developing countries (Oluwasemilore 2013). Another barrier is the limited access to scholarly communication platforms due to cost, restrictive licensing agreements, or lack of awareness (Chan 2004). Language barriers also make it difficult for researchers and academics that speak fewer common languages to access and use these platforms effectively. Cultural differences have also been cited as factors making it challenging to adopt and use scholarly communication platforms. Resistance to change and a lack of understanding or appreciation for the benefits of scholarly communication platforms can further hinder adoption and usage (Landa 2006).

Copyright and intellectual property laws can be complex and vary widely between countries, making it difficult for researchers and academics in developing countries to navigate these issues and comply with relevant regulations. Political instability and conflict can disrupt the development and adoption of scholarly communication platforms, as well as the ability of researchers and academics to access and use these platforms. Funding limitations can also constrain the development and maintenance of scholarly communication platforms in developing countries, as well as limit the ability of researchers and academics to access and use these platforms (Kawooya 2008; Puttaswamy and Krishnamurthy 2014). There is also a lack of standardisation in scholarly communication practices and platforms, which can create confusion and make it difficult for researchers and academics to use these platforms effectively (Larivière, Haustein, and Mongeon 2015).

Furthermore, the scholarly communication landscape in Africa still needs to overcome several challenges. One of the primary challenges is limited access to information, particularly in rural areas. Nevertheless, various initiatives have been established to address this challenge, including open access repositories and digital libraries that enable researchers to access scholarly information worldwide (Ahinon and Havemann 2018; Ahinon et al. 2020; Kolik and Rivera-Santos 2018; Tapfuma and Hoskins 2019). Therefore, there is a need for continued support and investment in developing scholarly communication platforms in Africa, particularly in local languages, to ensure that African researchers and scholars can fully participate in the global

academic community (Dulle and Minishi-Majanja 2009; Klain-Gabbay and Shoham 2018; Ocholla 2011).

Similar factors affect Zambia's adoption and usage of scholarly communication platforms, including limited access to technology, awareness and understanding, language barriers, lack of institutional support and funding constraints. One major challenge attributed to the setbacks is limited access to research resources, which hinders researchers in smaller institutions or remote areas from accessing the latest research findings, collaborating with peers and publishing their work. Zambia has made progress in developing institutional repositories and digital libraries to address this issue. However, much more must be done to ensure that all researchers have access to these resources and the necessary infrastructure and support to manage and preserve their data and publications. Another challenge contributing to the adoption and usage of scholarly communication is the need for more funding for research and publishing, which can make it difficult for researchers to carry out their activities and publish in international journals. However, the government and research institutions are taking steps to increase funding for research and publishing, such as establishing a research fund and providing financial support for researchers to publish in open access journals. Furthermore, despite these challenges, Zambia has several scholarly communication platforms, including journals that publish research on various fields such as agriculture, mathematics education, social sciences, law, health, energy, business, library and information science, gender studies and educational administration and policy studies. Zambia still faces challenges in the scholarly communication landscape, although there is growing recognition of the importance of research and a commitment to developing the necessary infrastructure and resources to support it (Chanda et al. 2020; Makondo, Kanyengo, and Kakana 2018; Muleya et al. 2020; Phiri et al. 2021).

3 Methodology

3.1 Research Design

Cross-sectional survey design is a widely used methodology for simultaneously collecting data from a diverse group of participants. In this research, the cross-sectional survey design was employed to gather information from the academic community in Zambia, enabling the study to capture a snapshot of the situation at a specific point in time. This approach is valuable for assessing the current state of scholarly communication in Zambia, as it allows for the collection of data from a large and varied sample of respondents in a cost-effective and efficient manner.

The cross-sectional survey design also allows for the examination of various factors, such as demographic information, perceptions, challenges and preferences, which can be crucial in understanding the landscape of scholarly communication within the academic community. By conducting the survey online using Google Forms, the research was able to reach a broad audience, making it accessible to a larger and more diverse set of participants. This approach helps provide a comprehensive view of the issues and trends related to scholarly communication in Zambia.

The survey comprised three sections:

Part 1: Background Information (4 questions)

This section collected demographic information from the respondents, including gender, age, current position and educational qualifications.

Part 2: Scholarly Communication in Zambia (4 questions)

This section covered publishing and accessing scholarly works, perceptions of scholarly communication services, challenges faced and ways to improve scholarly communication.

Part 3: Scholarly Communication Platforms in Zambia (3 questions)

This section collected information on the scholarly communication platforms used by the academic community in Zambia, their reasons and the importance of various factors in the decision to adopt and use scholarly communication platforms.

3.2 Survey Distribution and Sampling Strategy

A self-administered survey was distributed to Zambian researchers to collect quantitative data on the awareness and usage of scholarly communication platforms and the factors influencing their adoption and usage among faculty members and researchers in Zambia. The list of registered universities in Zambia was obtained from the Zambian Higher Education Authority regulations for 2020, which identified nine public institutions and 54 private institutions (Wikipedia 2023).

The rationale for using stratified random sampling was to account for potential differences in scholarly communication practices and perceptions among various segments of the academic community. This method allowed us to draw meaningful comparisons and generalisations within and across strata.

Potential biases in the sampling approach could arise from non-response bias, as some individuals may have been more or less likely to participate in the survey. Additionally, there might be selection bias if certain groups were under-represented in the population list used for sampling. However,

we attempted to mitigate these biases by employing rigorous sampling techniques, using a comprehensive list of universities and sending reminders to encourage participation.

Stratified random sampling was used to collect data, and email IDs were obtained from the Scopus database, targeting individuals with previous research experience. Affiliation country searches in the Scopus database were conducted with a year filter ranging from 2013 to 2022, resulting in 7,132 available documents. After removing duplicated unique IDs, 3,478 email IDs were retrieved from Scopus. Among these, the most published papers were in medicine, with 3,693 papers. The source title with the most articles was PLOS One, with 270 articles. Regarding affiliation, the University of Zambia had the highest published papers, totalling 2,787.

Additionally, Zambian authors mostly collaborated with authors from the United States, with 2,951 collaborations (Scopus 2023). The total number of study respondents was 386.

3.3 Survey Administration

The survey was distributed via email to the selected participants. An initial email explained the purpose of the study, provided a link to the survey and requested informed consent. To encourage participation, we sent up to four reminder emails at fortnightly intervals to non-respondents. The survey was administered in a manner that maintained the anonymity and confidentiality of participants. Ethical considerations were adhered to throughout the survey administration, and participants' contact information was handled with the utmost care. Data were collected from April 1, 2023 to June 30, 2023.

3.4 Reliability and Validity

To ensure the reliability of our findings, we conducted a test-retest reliability analysis for select survey items, demonstrating strong consistency in responses over time. For validity, the survey instrument was thoroughly reviewed and refined by experts in the field, enhancing its content validity. Additionally, we employed previously validated measurement scales when available.

3.5 Statistical Analysis

The quantitative data collected through the survey were analysed using descriptive statistics, such as frequency distributions, means and standard deviations.

3.6 Limitations

This study has several potential limitations, including the reliance on self-reported data, which may introduce response bias. In addition, the sample, while carefully stratified, may not fully represent the entire academic community in Zambia. Furthermore, the use of an online survey may exclude individuals without internet access, while the generalisability of the findings may be limited to the Zambian academic context.

4 Results

Table 1 presents demographic information from a study involving 386 respondents. The data reveals a gender distribution with 60.5 % male participants and 39.5 % female participants. The age groups of participants were well-distributed, with the majority falling in the 36–45 age range (39.7 %), followed by 26–35 (25.5 %). In terms of current positions, the study had a diverse representation, including academic staff/research staff (71.2 %), PhD research scholars (10.5 %) and administrative staff (17.3 %). When it comes to the highest level of education completed, the majority held master's degrees (69.8 %), while 28.6 % had attained doctorates and only 1.6 % held bachelor's degrees. This table provides essential background information about the study's participants, allowing for a better understanding of the sample's diversity and composition.

Table 2 shows the mean and standard deviation (SD) for ten different scholarly communication services, as rated by

Table 1: Background information.

Demographic Details	Item	Frequency	Percentage
Gender	Male	294	60.5
	Female	192	39.5
Age	18–25	6	1.2
	26–35	124	25.5
	36–45	193	39.7
	46–55	112	23.1
	56 and above	51	10.5
	Postgraduate student	5	1
Current position	PhD research scholar	51	10.5
	Academic staff/Research staff	346	71.2
	Administrative staff	84	17.3
Highest level of education completed	Bachelor's degree	8	1.6
	Master's degree	339	69.8
	Doctorate	139	28.6

respondents using a five-point scale ranging from strongly disagree (1) to strongly agree (5). The mean scores indicate the average level of agreement with each service, with higher scores indicating more positive perceptions of the service. The standard deviation (SD) measures the degree of variability in the responses, with larger values indicating more significant variation in the ratings. The results reveal that participants generally held positive views of these services.

Collaborative partnerships received the highest mean score (4.26), indicating strong support for collaborations with other institutions, publishers and scholarly societies to promote scholarly communication. Research data management also garnered favourable perceptions with a mean score of 4.22, indicating strong support for guidance on data management plans and data sharing.

Research impact metrics (mean score of 4.14) and providing access to scholarly resources (mean score of 4.13) were highly regarded, suggesting that participants valued tools to measure research impact and access to a variety of scholarly materials.

Scholarly communication education (mean score of 4.08) and institutional repositories (mean score of 4.07)

received positive ratings, indicating participants' appreciation for education in scholarly communication practices and access to scholarly publications.

Open access publishing (mean score of 4.05) was also well-received, reflecting positive perceptions of freely available online content. Digital preservation (mean score of 3.89) received a slightly lower rating but still showed support for long-term storage solutions.

Open educational resources (OER) had a mean score of 3.82, suggesting positive views but with a somewhat lower rating. Scholarly publishing services received the lowest mean score (3.55), indicating somewhat less positive perceptions of services such as peer review and editing.

The findings indicate that participants generally had positive perceptions of scholarly communication services, with strong support for collaborative partnerships, research data management and research impact metrics, while scholarly publishing services received a lower rating. These findings can provide valuable insights for institutions aiming to enhance their scholarly communication offerings and tailor their services to meet the needs and expectations of their constituents.

Table 3 reveals the array of challenges faced by individuals in Zambia when attempting to access scholarly works. Participants rated these challenges on a scale from 1

Table 2: Perception of scholarly communication services.

Perception of comprehensive scholarly communication services	Mean	SD
Collaborative partnerships (with other institutions, publishers and scholarly societies to promote scholarly communication)	4.26	0.99
Research data management (providing guidance on data management plans, data storage and data sharing)	4.22	1.01
Research impact metrics (providing tools and resources to help researchers measure the impact of their research, including citation analysis and altmetrics)	4.14	1.01
Providing access to scholarly resources (giving access to various scholarly resources, including books, journals, databases and research papers, both in print and online)	4.13	1.03
Scholarly communication education (scholarly communication practices, including open access publishing, copyright and citation)	4.08	1
Institutional repositories (providing access to scholarly publications, including research papers, theses and dissertations)	4.07	0.91
Open access publishing (freely available online, without restrictions on access or use)	4.05	1.01
Digital preservation (providing long-term storage solutions to ensure that scholarly work remains accessible over time)	3.89	1.04
Open educational resources (OER) (providing access to OER materials and supporting faculty in finding, evaluating and adopting OER)	3.82	1.02
Scholarly publishing services (peer review, editing, formatting and distribution)	3.55	1.10

Table 3: Challenges in accessing scholarly works in Zambia: perceptions and rating.

Challenges you have encountered in accessing scholarly works	Mean	SD
The lack of infrastructure, such as electricity and internet access, hinders the ability to access and use scholarly works in Zambia	3.97	0.95
Limited availability of interlibrary loans hinders the ability to access resources that are not available in local libraries in Zambia	3.96	1.01
Lack of funding for academic research	3.94	1.06
Limited institutional support makes it difficult to obtain funding, conduct studies and disseminate research findings in Zambia	3.92	1.02
Limited access to specialised databases hinders the ability to find relevant and up-to-date information	3.83	1.02
The limited availability of research materials makes it difficult to conduct comprehensive studies in Zambia	3.71	1.04
The cost of accessing scholarly works in Zambia is prohibitively high	3.69	1.07
Online resources in Zambia are not user-friendly and difficult to navigate	3.56	1.10
There is a lack of awareness and training on how to access scholarly works in Zambia	3.5	1.11
Physical resources, such as textbooks and academic journals, are outdated and not useful for current research needs	3.47	1.15

(indicating minor obstacles) to 5 (indicating significant hindrances).

Key challenges include the lack of essential infrastructure, such as electricity and internet access, with a mean score of 3.97. Limited availability of interlibrary loans, which hinders access to resources not locally accessible, closely follows with a mean score of 3.96. The inadequacy of funding for academic research received a substantial mean score of 3.94, highlighting the pressing need for more financial support in the academic sector.

Moreover, limited institutional support, rated at 3.92, proves to be a significant challenge affecting funding acquisition, research endeavours and the dissemination of research findings. The limited access to specialised databases was seen as a hindrance in finding relevant and up-to-date information, scoring a mean of 3.83.

The limited availability of research materials, receiving a mean score of 3.71, presents difficulties for comprehensive studies in Zambia. Additionally, the high cost associated with accessing scholarly works, scoring 3.69, is considered prohibitively expensive. Online resources in Zambia were deemed not user-friendly and difficult to navigate, with a mean score of 3.56.

Furthermore, a lack of awareness and training regarding how to access scholarly works was acknowledged as a challenge, scoring 3.5. Finally, physical resources such as textbooks and academic journals were found to be outdated and unsuitable for current research needs, rated at 3.47.

These results illustrate a multitude of challenges in accessing scholarly materials in Zambia, encompassing infrastructure limitations, funding constraints, issues with resource availability and usability concerns. Addressing these challenges is essential for enhancing access to scholarly materials, fostering academic research and facilitating educational development in Zambia.

Table 4 outlines the strategies for improving scholarly communication in Zambia, with frequencies and percentages based on responses from 386 participants. The top strategies, favoured by the majority, include increased funding for research (76.2 %), providing incentives for open access publishing (66.1 %), improving library infrastructure (55.4 %) and developing open access policies (51.6 %). Other notable strategies include increased collaboration among researchers, local scholarly publishing platforms, training in scholarly communication, the use of preprint servers, public engagement with research and improved access to research tools and resources. These findings indicate a strong desire for increased financial support, open access initiatives, infrastructure enhancements and collaboration among researchers to advance scholarly communication in Zambia.

Table 4: Ways to improve scholarly communication in Zambia: frequency and percentage of responses.

Ways to improve scholarly communication in Zambia	Frequency	Percentage (N = 386)
Increased funding for research	294	76.2
Providing incentives for open access publishing	255	66.1
Improvement of library infrastructure	214	55.4
Development of open access policies	199	51.6
Increased collaboration among researchers	158	40.9
Developing local scholarly publishing platforms	152	39.4
Providing training in scholarly communication	146	37.8
Encouraging the use of preprint servers	138	35.8
Promoting public engagement with research	106	27.5
Improving access to research tools and resources	98	25.4

Table 5 shows the frequency and percentage of respondents who reported using scholarly communication platforms for research or studies. All 386 respondents reported using scholarly communication platforms, resulting in a 100 % usage rate. None of the respondents reported not using scholarly communication platforms, resulting in a 0 % non-usage rate. This suggests that all participants in the study actively utilise scholarly communication platforms as part of their research or academic work.

Table 6 presents data on the usage of scholarly communication platforms by 386 participants in the past year. Notably, Google Scholar was widely favoured, with 96.1 % of participants (371 individuals) relying on it for academic research. ORCID, serving as a unique identifier for researchers, was also widely adopted, with 54.9 % of participants (212 individuals) using it to manage their research identities.

Surprisingly, Twitter was utilised by 49.7 % of participants (92 individuals) for scholarly communication and networking, demonstrating its increasing relevance in the academic sphere. ResearchGate and LinkedIn were actively employed

Table 5: Use of scholarly communication platforms for research or studies.

Use scholarly communication platforms for research or studies	Frequency	Percentage
Yes	386	100
No	0	0

Table 6: Scholarly communication platforms used in the past year.

Scholarly communication platforms used in the past year	Frequency	Percentage (N = 386)
Google Scholar	371	96.1
ORCID	212	54.9
Twitter	92	49.7
ResearchGate	169	43.8
LinkedIn	164	42.5
PubMed Central	139	36
Academia.edu	99	25.6
Mendeley	78	20.2
SSRN	74	19.2
arXiv	63	16.3

by 43.8 % (169 individuals) and 42.5 % (164 individuals) of respondents, respectively, for academic networking and professional connections.

PubMed Central, a repository for biomedical and life science literature, saw usage among 36 % of participants (139 individuals). Elsewhere, Academia.edu was employed by 25.6 % of participants (99 individuals) for sharing and discovering academic research.

Mendeley, a reference management and academic social network, was used by 20.2 % of respondents (78 individuals), while SSRN (Social Science Research Network) and arXiv were accessed by 19.2 % (74 individuals) and 16.3 % (63 individuals) of participants, respectively.

These findings reflect the diverse and evolving landscape of scholarly communication, with a wide range of platforms being actively employed by researchers for collaboration, information dissemination and research discovery. These platforms play a vital role in modern academic and research practices, fostering global collaboration and facilitating the accessibility of scholarly work across various fields and disciplines.

Table 7 provides insight into the reasons for using scholarly communication platforms as reported by 386 participants. The primary motivation, cited by a significant 93 % of respondents, is to discover research articles, emphasising the central role these platforms play in accessing and staying informed about the latest research in various fields. Collaboration with other researchers is another prominent driver, with 76.2 % of participants utilising these platforms for joint research efforts and knowledge exchange.

Sharing research articles (54.7 %) and seeking increased visibility and citation impact for research (54.1 %) are also essential reasons, underscoring the significance of these platforms in facilitating the dissemination and impact of scholarly work. Furthermore, many researchers use these platforms to publish their research articles or preprints

Table 7: Reasons for using scholarly communication platforms.

Reasons for using the scholarly communication platforms	Frequency	Percentage (N = 386)
To discover research articles	359	93
To collaborate with other researchers	294	76.2
To share my research articles	211	54.7
To gain visibility and increase citation impact for research	209	54.1
To publish research articles or preprints	205	53.1
To engage in discussions with peers in the field	197	51
To stay updated with the latest research trends	172	44.6
To find funding opportunities	153	39.6
To discover job opportunities	148	38.3

(53.1 %) and engage in discussions with peers (51 %), fostering academic discourse and collaboration.

Staying updated with the latest research trends (44.6 %) is a critical function of these platforms, allowing researchers to remain informed about developments in their respective fields. Additionally, some participants use these platforms to find funding opportunities (39.6 %) and discover job prospects (38.3 %) in academia and research.

These findings demonstrate that scholarly communication platforms are instrumental in various aspects of the research process, from discovering articles and collaborating with peers to sharing research, gaining visibility and staying updated with the latest trends. They also serve as valuable resources for finding funding and job opportunities in the academic and research domains.

Table 8 presents valuable insights into the factors that influence the adoption and use of scholarly communication platforms, as rated by participants using a scale ranging from “Not important” to “Extremely important.” The data reveals that the user interface and design of these platforms received the highest rating, with a mean score of 4.37, indicating that participants highly value a user-friendly and visually appealing interface. Collaboration and sharing features closely followed with a mean score of 4.28, underscoring the importance of these platforms in supporting research collaboration and the sharing of scholarly materials.

Additionally, the availability of training and educational resources was deemed highly important, with a mean score of 4.22, suggesting that users place significant value on having access to resources that help them effectively navigate and utilise the platform. Privacy and security features received a mean score of 4.16, indicating the importance of data protection and confidentiality for users.

While cost and subscription fees were moderately important (mean: 4.14), it is evident that participants consider

Table 8: Importance of factors in adopting and using scholarly communication platforms.

The importance of the following factors in the decision to adopt and use scholarly communication platforms is...	Mean	SD
User interface and design	4.37	0.92
Collaboration and sharing features	4.28	0.93
Availability of training and educational resources	4.22	0.97
Privacy and security features	4.16	0.87
Cost and subscription fees	4.14	0.88
Citation and reference management tools	4.12	1
User support and customer service	4.10	0.92
Ease of use	4.04	0.90
Integration with other tools and platforms	4.04	1.03
Availability of relevant content	3.98	0.99

Scale used: not important (1), slightly important (2), moderately important (3), very important (4), extremely important (5).

affordability as a factor in their decision to adopt these platforms. The survey respondents also attached importance to citation and reference management tools, user support and customer service, ease of use and integration with other tools and platforms.

The availability of relevant content, though important, received a slightly lower mean score (3.98), indicating that while users value content, they prioritise functionality and features when choosing scholarly communication platforms. Participants emphasised the significance of user interface and design, collaboration features, training resources, privacy and security, and cost in their choice of scholarly communication platforms. These findings offer valuable guidance for platform developers and providers seeking to cater to the preferences and needs of users in this academic and research context.

5 Discussion

The descriptive data analysis led to conclusions highlighting the significance of scholarly communication platform usage and adaptation by researchers and scholars covered in this section. The initial focus was to ascertain what essential understanding of scholarly communication researchers have. The respondents were also questioned on their opinion of scholarly communication platforms, usage, importance and barriers to adopting scholarly communication platforms.

Table 1 provides an outline of the demographic characteristics of the respondents. The study mainly consisted of male respondents between the ages of 36 and 45, with most academic and research staff holding master's degrees. Table 2 outlines the perception of scholarly communication

services among researchers. Favourable responses to scholarly communication services providing access to scholarly resources, scholarly communication education and collaborative partnerships are in line with Ntim and Fombad (2021), who found that scholarly communication services help to bridge the knowledge gap between African researchers and their counterparts in other parts of the world promoting international partnerships and increasing the visibility of African research.

The results of the study revealed that most of the respondents were less optimistic about the importance of scholarly communication services, open educational resources, digital preservation and scholarly publishing services, especially due to limitations that come with implementing scholarly communication platforms, such as limited infrastructure, access to reliable internet connectivity and electricity and storage capacity (Chiwere 2020; Hoskins 2010; Ngulube and Masenya 2020; Oluwasemilore 2013; Smith and Casserly 2006).

Table 3 outlines the challenges of accessing scholarly works in Zambia. Technological limitations include limited infrastructure, access to reliable internet connectivity and electricity, incompatible technology and limited bandwidth and storage capacity. Moreover, more technical skills and adequate technical support can be needed to ensure the effective adoption and usage of scholarly communication platforms in developing countries (Oluwasemilore 2013). Another barrier is the limited access to scholarly communication platforms due to cost, restrictive licensing agreements or lack of awareness (Chan 2004). Language barriers also make it difficult for researchers and academics that speak fewer common languages to access and use these platforms effectively. Cultural differences have also been cited as a reason for it being challenging to adopt and use scholarly communication platforms. Resistance to change and a lack of understanding or appreciation for the benefits of scholarly communication platforms can further hinder adoption and usage (Landa 2006).

The findings of this study show that funding for academic research limited the availability of research material and access to specialised databases, and led to outdated physical materials, difficulty in accessing online resources, lack of infrastructure and limited institutional support. Researchers hence need help finding relevant and up-to-date information; it is therefore essential for the government and research institutions to increase funding for research and publishing, such as establishing a research fund and providing financial support for researchers to publish in open access journals.

Table 4 provides an outline of the ways to improve scholarly communication in Zambia. According to recent studies, various initiatives have been established to address

this challenge, including open access repositories and digital libraries that enable researchers to access scholarly information worldwide (Ahinon and Havemann 2018; Ahinon et al. 2020; Kolk and Rivera-Santos 2018; Tapfuma and Hoskins 2019). Therefore, there is a need for continued support and investment in developing scholarly communication platforms in Africa, particularly in local languages, to ensure that African researchers and scholars can fully participate in the global academic community (Dulle and Minishi-Majanja 2009; Klain-Gabbay and Shoham 2018; Ocholla 2011). Zambia has made progress in developing institutional repositories and digital libraries to address this issue. However, much more must be done to ensure that all researchers have access to these resources and the necessary infrastructure and support to manage and preserve their data and publications (Makondo, Wamunyima Kanyengo, and Kakana 2018). Furthermore, the government and research institutions are taking steps to increase funding for research and publishing, such as establishing a research fund and providing financial support for researchers to publish in open access journals (Chanda et al. 2020). The findings of this study show that the best way to improve scholarly communication in Zambia is to increase funding for research, develop open access policies, improve library infrastructure, develop local scholarly publishing platforms, provide training in scholarly communication, improve access to research tools and resources, encourage the use of preprint servers and increase collaboration among researchers.

Table 5 outlines the use of scholarly communication platforms for research or studies. According to Fraser et al. (2021), scholarly communication platforms allow for researcher sharing among the academic community and beyond, which can advance knowledge in their respective fields, explaining their ability to increase research. It is evident from the literature that research and studies are almost only possible with sharing and collaboration in the knowledge made more accessible by innovation, such as scholarly communication platforms. The findings of this study show that research and studies can only occur with scholarly communication.

Table 6 outlines scholarly communication platforms used in the previous year to the study. Online repositories, such as arXiv and bioRxiv, provide researchers with a platform to share their work openly and publicly, which can help to increase the speed and efficiency of knowledge dissemination (Parks et al. 2023). Social media platforms have also been effective in enhancing research visibility in Africa, as highlighted by Budree, Fietkiewicz and Lins (2019), who found that platforms like Twitter and LinkedIn are highly effective in promoting African research and increasing its

visibility. Tella et al. (2013) also found that social media platforms like Facebook and Twitter effectively facilitate scholarly communication among African researchers. Elsewhere, ResearchGate has gained popularity in developing countries because it provides an alternative to expensive journal subscriptions and allows researchers to access information that would otherwise be difficult to obtain (Nicholas et al. 2017). Another popular platform is Academia.edu which, like ResearchGate, allows researchers to share their work and connect with others in their field. Another avenue of note are open access repositories, which are digital archives allowing researchers to upload and share their work with others worldwide (Kinder-Kurlanda et al. 2017). One example of an open access repository is the Directory of Open Access Repositories (OpenDOAR), which provides a comprehensive list of repositories worldwide (Singh 2016). This study shows that several scholarly communication platforms were in use in the year previous to the study: Google Scholar, ResearchGate, Academic.edu, Mendeley, ORCID, LinkedIn, Twitter, arXiv, PubMed and Central, while SSRN was the least used platform.

Table 7 provides an overview of the reasons for using scholarly communication platforms. Scholarly communication platforms can have a significant impact on research dissemination. Conferences allow researchers to share their work with peers, receive feedback and establish collaborations (Hadam and Aharony 2023). These platforms have significantly impacted the visibility and accessibility of research outputs, fostering collaboration and networking among scholars and researchers within and beyond the continent. This study revealed that the primary reasons for using scholarly communication were to discover and share research articles and collaborate with other researchers, in addition to staying up to date with the latest research trends, finding funding opportunities, gaining visibility and increasing citation impact for researchers, engaging in discussions with peers in the field as well as publishing research articles or preprints. Scholarly communication platforms are also used for discovering job opportunities.

Table 8 outlines the critical factors in adopting and using scholarly communication platforms. The study showed that the importance of various factors in the decision to adopt and use scholarly communication platforms include ease of use, availability of relevant content and user support and customer service, while other factors include integration with other tools and platforms and privacy and security features. It is worth noting that the study indicated that factors such as interface and design, citation and reference management tools, availability of training and education resources, and collaboration and sharing features were used, but were seen as moderately important.

6 Implications of the Study

6.1 Bridging the Knowledge Gap

One of the significant implications of this study is its potential to bridge the knowledge gap between African researchers, particularly in Zambia, and their counterparts in other parts of the world. The findings reveal that academic and research staff in Zambia are aware of scholarly communication platforms and their importance in facilitating the exchange of knowledge. This awareness is crucial for fostering collaborations, sharing research findings and increasing the visibility of African research on the global stage. As a result, this study can empower policymakers, educational institutions and academic stakeholders to leverage scholarly communication platforms to strengthen the position of Zambian researchers in the international academic community.

6.2 Technological Advancement and Capacity Building

The study identifies technological limitations, including limited infrastructure, access to reliable internet connectivity and inadequate technical support, as barriers to the effective adoption and usage of scholarly communication platforms in developing countries like Zambia. To address these challenges, there is a clear need for investment in improving technological infrastructure and providing technical training and support to academic and research communities. Policymakers and institutions can use these findings to prioritise the development of technical skills, ensuring that Zambian researchers have the necessary tools to fully benefit from scholarly communication platforms.

6.3 Enhancing Scholarly Communication Services

The study's findings offer insights into various strategies to enhance scholarly communication services in Zambia. These include increasing funding for research, developing open access policies, improving library infrastructure, establishing local scholarly publishing platforms, providing training in scholarly communication, improving access to research tools and resources, encouraging the use of preprint servers and fostering collaboration among researchers. These recommendations can guide policymakers and institutions in designing and implementing policies and initiatives that

support a vibrant scholarly communication ecosystem in Zambia.

6.4 Integral Role of Scholarly Communication Platforms

The study underscores the essential role of scholarly communication platforms in facilitating research and studies. It demonstrates that these platforms, such as Google Scholar, ResearchGate, Academic.edu, Mendeley, ORCID, LinkedIn, Twitter, arXiv, PubMed Central and SSRN, play a vital role in discovering and sharing research articles, collaborating with peers, staying updated with the latest research trends, finding funding opportunities, increasing visibility and engaging in discussions with fellow researchers. Moreover, they are crucial for academic institutions and individuals to discover job opportunities in the academic and research sector. Recognising the pivotal role of these platforms can guide universities, libraries and researchers in promoting their use and optimising their impact on academic and research activities.

6.5 Factors for Effective Adoption

The study identifies key factors influencing the adoption and usage of scholarly communication platforms, such as ease of use, availability of relevant content and user support and customer service. Policymakers and institutions can use this information to tailor their strategies for improving the adoption and use of these platforms by addressing these factors. Additionally, integration with other tools and platforms and privacy and security features are areas where improvements can further enhance the effectiveness and appeal of scholarly communication platforms.

This research contributes valuable insights into the state of scholarly communication in Zambia and offers practical recommendations for improving scholarly communication services, fostering collaboration and overcoming technological challenges. It serves as a foundation for policymakers, academic institutions and researchers to make informed decisions that will advance the scholarly communication landscape in Zambia, ultimately benefiting the academic community and research outcomes.

7 Conclusions

This research on assessing the use of scholarly communication platforms in Zambia has implications that extend beyond the borders of the country. While the study primarily

focuses on Zambia, its findings and insights hold relevance for a wider audience.

Scholarly communication platforms are integral to the global academic landscape. Researchers, irrespective of their geographic location, rely on these platforms to disseminate their work, collaborate with peers and access a wealth of academic knowledge. Therefore, understanding the dynamics of scholarly communication in Zambia contributes to the broader discussion on the international academic stage.

Readers from other countries can find value in this research by gaining insights into the challenges and opportunities that researchers in Zambia face when it comes to scholarly communication. The study offers a window into the technological limitations, such as infrastructure and access issues, that can be prevalent in developing regions and provides potential solutions that could be applicable globally.

Moreover, the study highlights the significant role of scholarly communication platforms, which are used by researchers worldwide. Understanding why and how these platforms are adopted and utilised can inform the global academic community about best practices and strategies for improving scholarly communication services.

In an era of increasing international collaboration, the findings of this research underscore the importance of addressing technological barriers, promoting open access policies and enhancing scholarly communication infrastructure not only in Zambia but also in other regions. The lessons learned from Zambia's experiences can serve as a valuable reference for policymakers, academic institutions and researchers seeking to strengthen scholarly communication practices on a global scale.

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