



Research Paper

Open Access and Sustainability in Scholarly Communication: A Library-Centered Perspective

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Abstract: Open Access (OA) has emerged as a significant model of scholarly communication by enabling free and unrestricted access to research outputs. Traditional subscription-based publishing systems have created economic and legal barriers that limit access to scholarly literature, particularly for researchers and institutions in developing and resource-constrained environments. In this context, open access plays a vital role in promoting sustainable knowledge sharing by ensuring equitable access, long-term availability, and responsible dissemination of scholarly information. This paper examines the concept of open access and analyzes the evolving role of libraries in supporting sustainable knowledge-sharing practices. The study adopts a descriptive and analytical research design based on a qualitative review of secondary sources, including peer-reviewed journals, conference proceedings, books, and policy documents. The findings reveal that libraries have transitioned from traditional information providers to active facilitators of scholarly communication through open access advocacy, institutional repository management, publishing support, and information literacy initiatives. However, challenges such as limited awareness, financial constraints, and infrastructural limitations continue to affect effective implementation. The paper concludes that strengthening institutional policies and library capacities is essential for advancing sustainable and inclusive knowledge sharing.

Keywords: Open Access, Sustainable Knowledge Sharing, Scholarly Communication, Institutional Repositories

I. Introduction

The scholarly communication system has experienced significant transformation with the advancement of information and communication technologies and the widespread use of the internet. Although these developments have contributed to the proliferation of research in terms of volume and speed, access to scholarly literature has been limited in the traditional models of publishing based on subscriptions. The costs of journal subscriptions, the restrictive nature of the licensing agreements, and the reduction of the library budgets have posed critical obstacles to access to information especially to the academic institutions located in the developing regions and resource constrained areas [8]. This has been a cause of disparity in accessing knowledge and the inability to make good use of research outputs. Open Access (OA) has turned out to be a good alternative to old forms of publishing through fostering free, instant and unlimited access to scholarly literature via the Internet. OA positively affects the visibility, access, and the impact of research outputs and promotes the idea that publicly funded research must be availed to the good of the society at large [3]. This has made open access to be a significant aspect of the modern scholarly communication systems. Green knowledge sharing focuses on long-term availability, reputable utilization, conservation, and inaccessibility in distributing academic data. Open access helps to realize sustainability by mitigating the reliance on an expensive subscription-based resource, minimizing the redundancy of research work, and assists in the practice of digital preservation. Open access also empowers research collaboration and exchange of knowledge around the world because it allows broader knowledge dissemination [5]. Libraries have been known as the holder of knowledge, who would acquire information, store it and make it available to the world. Their role in the open access environment has changed to include advocacy of open access as well as collection development, institutional repository development and management, open access publishing as well as information literacy support. Changing the role of libraries thus plays a central role in enhancing open access and sustainable sharing of knowledge to academic and research communities.

II. Objective Of The Study

The objectives of the present study are:

1. To examine the concept of open access and its significance in sustainable knowledge sharing.
2. To analyze the evolving role of libraries in promoting and supporting open access initiatives.

3. To identify key library-driven mechanisms that facilitate sustainable scholarly communication.
4. To explore the challenges faced by libraries in implementing open access practices.
5. To suggest measures for strengthening library involvement in open access and sustainable knowledge sharing.

III. Review Of Literature

Open access has been widely discussed as a transformative approach in scholarly communication, particularly in addressing access barriers created by traditional subscription-based publishing models. Initial research focused on the significance of open access programs in academic libraries as a way of enhancing access to academic materials and lowering reliance on expensive journal subscriptions. Open access programs play a critical role of benefiting academic libraries in the sense that they lead to increased accessibility as well as equitable knowledge dissemination [6]. A conceptual review of the open access; the author underlined unrestricted access, increased visibility of research, and wider dissemination as the principles of the open access [7]. Such researches define the primary importance of open access in the knowledge sharing in sustainability. A number of scholars have also studied the changing nature of the role of libraries in the open access environment. Academic librarians have no longer remained in the traditional functions of collection management but have taken the active roles of promoting open access, repository managers, and educators of users [13]. The digital age, libraries are re-defining access, education, and cultural preservation through the use of open access and digital capabilities [10]. The future of librarianship has been formed through open access initiatives that need libraries to become policy-oriented and collaborative in their efforts [11]. All these studies have suggested the growth of the role of libraries in facilitating open access and sustainable scholarly communication. There has also been intense attention on the role of technology in the open access and sustainable knowledge sharing. The impact of digital repositories and the emerging technologies on open access services in libraries, which enhanced the dissemination of knowledge [4]. The notion of the intelligent library and showed how the technological innovation would help to achieve sustainable knowledge systems [1]. The topic of library and information services in the digital era and revealed the opportunities and operational challenges linked to the use of technology. These works confirm the opinion that the mechanisms made by libraries and the technological infrastructure are key to the implementation of sustainable open access [9]. Additionally, some studies have observed that there are still a number of barriers even with the increased usage of open access. Awareness and attitudes towards open access and concluded that, despite the awareness, there are barriers to its broader implementation like the cost of publication and the publishing knowledge which makes the implementation more difficult [12]. Similar issues were outlined in infrastructure, manpower, and awareness in the university libraries, with additional suggestions to the opportunities of the open access resources [14]. In the critical analysis of the global open access movement, found out that despite the fact that open access has gone beyond what was considered impossible to probable, there is a question mark regarding long-term sustainability [2]. In general, the literature review shows that many studies have discussed the open access initiatives, library roles, technological support, and other related issues separately, but few studies have examined open access as a whole concerning the issue of sustainable knowledge sharing and role change of libraries on the same platform of analysis. The current research aims to fill this gap by incorporating the concepts of open access, sustainability views, library-based processes, issues and strategic interventions and therefore add to the holistic perspective of the sustainability of scholarly communication.

Table 1: Review of Open Access Studies

Sl. No.	Author(s) & Year	Purpose / Focus of the Study	Major Findings
1	Sultan & Rafiq (2021)	Examined awareness, challenges, and opportunities of open access resources in university libraries.	Found high awareness of OA benefits but identified infrastructural and manpower challenges.
2	Anglada & Abadal (2023)	Analyzed the evolution of the open access movement globally.	Concluded that OA adoption has grown but long-term sustainability remains uncertain.
3	Onunka et al. (2023)	Studied library and information services in the digital age.	Identified technological opportunities and operational challenges for libraries.
4	Rahmanova (2025)	Examined the evolution of libraries in the digital era.	Libraries are redefining access, education, and preservation functions.
5	Ramesh (2025)	Analyzed the role of OA initiatives in future librarianship.	Emphasized policy-driven and collaborative OA models.
6	Gangadhar (2024)	Discussed emerging OA innovations in LIS.	Highlighted innovative OA practices and future trends.
7	Adigun et al. (2024)	Studied intelligent libraries and sustainable knowledge systems.	Found that smart and digital libraries enhance sustainable knowledge access.
8	Tiwari et al. (2024)	Explored the role of technology in facilitating OA and knowledge sharing.	Digital repositories and emerging technologies strengthen OA services.
9	Joshi et al. (2012)	Examined OA initiatives in academic libraries.	OA reduces subscription dependency and improves access.

10	Siddiqui (2014)	Studied changing role of academic librarians in OA environment.	Librarians play a key role in advocacy, repositories, and user education.
11	Sheikh (2019)	Analyzed faculty awareness and attitudes toward OA.	Awareness exists, but APCs and lack of knowledge hinder OA publishing.
12	Mavodza (2013)	Reviewed the OA concept and its development.	Defined OA and emphasized unrestricted access and visibility.

IV. Methodology

This study adopts a descriptive and analytical research design based on a qualitative review of secondary literature to examine the role of open access in sustainable knowledge sharing and the evolving responsibilities of libraries. Relevant literature published between 2010 - 2025 was collected from academic databases such as Scopus, Web of Science, Google Scholar, and open access repositories using keywords like open access, sustainable knowledge sharing, scholarly communication and role of libraries were used to search academic databases and open access platforms. The analysis only involved credible and relevant sources that answered the objectives of the research directly. Thematic content analysis was applied to the collected literature to reveal the main themes within the literature, such as the importance of open access, changing roles of libraries, mechanisms led by libraries, implementation issues, and sustenance actions. The research is constrained as conceptual and functional of library led open access initiatives and lacks upon empirical measures and statistical analysis.

V. Findings

5.1 Significance of Open Access in Sustainable Knowledge Sharing

The results show that open access is a core requirement in ensuring sharing of knowledge sustainably since scholarly information is freely accessible without restriction. Open access eliminates institutional and financial access controllers that have traditionally restricted the dissemination of research results, especially in developing and resource-based regions [6]. The available literature points out that open access raises the visibility of research, boosts the impact of citation, and promotes interdisciplinary cooperation. In the sustainability aspect, open access promotes long-term availability, minimized research duplication, and the utilization of publicly-funded research to the maximum [2]. Digital open access services also reduce the use of print resources, hence, helping in ensuring proper environmental practices. On the whole, the discussion supports the fact that open access is one of the main factors that promote equitable, inclusive, and sustainable knowledge sharing.



Figure 1:Significance of Open Access in Sustainable Knowledge Sharing (Author’s Self Compiled)

5.2 Evolving Role of Libraries in Open Access Promotion

Analysis shows that there has been a major shift in the position of libraries in the open access ecosystem. Libraries have also changed their traditional role of providing information to being dynamic enablers of scholarly communication [13]. The librarians now indulge in open access advocacy, policy formulation, and awareness creation to the researchers and academic communities. The results indicate that libraries provide authors with the right direction in the choice of the open access publishing models and inform them about copyright, licensing, and author rights. Libraries support ethical publishing and informed decision-making, which is enhanced through training courses and consultations, which enhances the research support of the

institution [11]. This is a changing role that places libraries as strategic collaborators in institutional research development and long-term knowledge-sharing activity.



Figure2:Evolving Role of Libraries in Open Access Promotion
(Author’s Self Compiled)

5.3 Library-Driven Mechanisms Supporting Sustainable Scholarly Communication

Institutional repositories are one of the best mechanisms of libraries that promote sustainable scholarly communication, identified in the study. Libraries operate the repositories which store and distribute the institutional research outputs in the form of theses, dissertations, journal articles, and conference papers, and make them accessible and visible over the long term [7]. These archives improve the distribution of research worldwide and play a role in the digital preservation. Besides, libraries facilitate sustainable scholarly communication by creating metadata, indexing support, and hosting open access journals and conference proceedings. The results also mention the increasing presence of libraries as a component of open data practices and research transparency, which also contributes to the preservation of knowledge and its availability in the online realm [15].

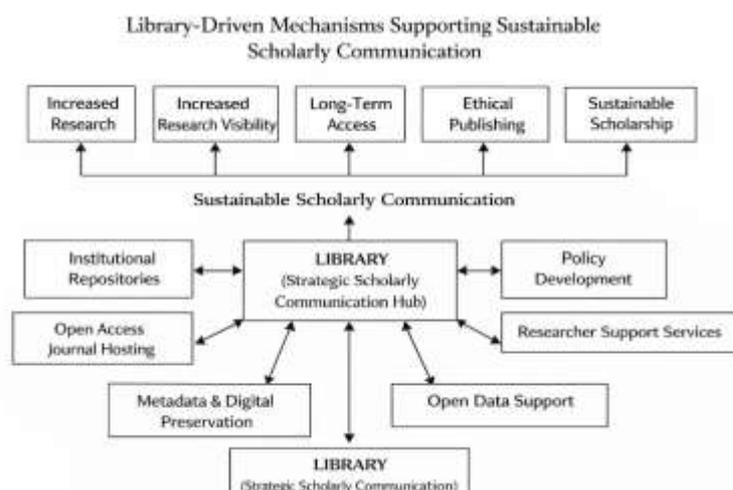


Figure 3: Library Mechanisms for Scholarly Communication
(Author’s Self Compiled)

5.4 Challenges Faced by Libraries in Open Access Implementation

The data indicate that there are a number of obstacles within the successful execution of open access programs in libraries. One of such problems is the awareness and understanding of the concepts of open access among researchers, which results in their low involvement in self-archiving and open publishing [12]. The quality and credibility of open access journals, as well as the existence of predatory publishers, are also a cause of concern and discourage their use. Both institutions and researchers face challenges of the financial limitations especially the article processing charges. Also, poor technical infrastructure and lack of capability of qualified library workers influence the management of repositories and the provision of services [14]. These issues indicate that there should be increased institutional backing and capacity building.



Figure4:Challenges Faced by Libraries in Open Access Implementation
(Author's Self Compiled)

5.5 Measures for Strengthening Library Role in Open Access and Sustainability

The analysis suggests several measures to strengthen the role of libraries in promoting open access and sustainable knowledge sharing. Clear institutional open access policies formulation and implementation are considered to be critical elements of enhancing participation and compliance [11]. More open access publishing cost barriers can be solved by increased institutional and funding agency support in terms of financial and administrative support. The development of technical and managerial competencies can only be achieved through capacity-building programs such as regular training and professional development of the librarians. Moreover, community between libraries, academic departments, publishers, and policymakers are highlighted as one of the primary approaches to developing an encouraging and sustainable open access ecosystem [1].

VI. Discussion

The findings of the present study clearly demonstrate that open access has become a cornerstone of sustainable knowledge sharing in the contemporary scholarly communication environment. Open access directly eliminates the financial and institutional obstacles to accessing scholarly works, which over time has been a cause of inequalities in access to scholarly literature especially by researchers and institutions with limited resources and ones in developing countries. Findings affirm that open access does not only increase the visibility and impact of research products but also contributes to sustainability by making research products accessible in the long term and minimizing redundancy of research products, as well as optimizing the utilization of publicly funded research. These findings support the claim that open access must be considered a strategic and sustainable paradigm of scholarly communication, and not as an alternative mode of publishing. The discussion also brings forward the changing and becoming even more strategic role of libraries in the open access ecosystem. This change in the orientation of libraries to become agents of scholarly exchange of information rather than archives of information is significant paradigm shift. The libraries are now becoming a strong contributor of propagating the ideals of open access, advising the researchers on their choice of publication, institutional repository administration and stimulating ethical and responsible usage of information. This expansion of role that causes libraries to be the central actors in the creation and dispersion of institutional research and the distributors of knowledge is what renders the library services consistent with the higher educational and social goals. The libraries, and in particular the institutional repositories, assume a pivotal role in the sustainable scholarly communication because of the mechanisms that they are the key infrastructures. These platforms do not only preserve products of institutional research but also enhance visibility across the world besides enhancing digital long-term preservation. In addition, transparency and access of research are being strengthened by the augmented support of libraries in metadata management, open access journals hosting and open data projects. The discussion also acknowledges the endemic issues of extremely low awareness among the researchers, the problem of poor quality of publication, financial constraint applying by the article publishing fee and constraint of infrastructures. The key to solving these problems is to ensure the presence of integrated institutional policies, adequate funding and continuous capacity-building initiatives of workers in libraries. The discussion indicates that libraries should be empowered to transform the open access principles into sustainable, inclusive, and sustainable knowledge-sharing systems.

VII. Conclusion

The study concludes that open access plays a crucial role in enabling sustainable knowledge sharing by ensuring equitable access, long-term availability, and responsible dissemination of scholarly information. The findings highlight that open access enhances research visibility and impact while reducing financial and institutional barriers to information access. Libraries have emerged as key facilitators in this transformation by actively promoting open access, managing institutional repositories, and supporting ethical publishing practices. Despite challenges related to awareness, funding, and infrastructure, the study emphasizes that strong institutional policies, capacity-building initiatives, and collaborative efforts can significantly strengthen library-led open access initiatives. Overall, empowering libraries is essential for building inclusive and sustainable scholarly communication systems.

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