



Sustainable Development Goals And Green Library Research: A Bibliometric Insight Into Global Contributions

Sweta Chauhan ^{a,*}, Satpal Sahoo ^{b&} Anju Singh ^c

^a Department of Library, Smt. Devkiba Mohansinhji Chauhan College of Commerce & Science (University of Mumbai),
Silvassa 396230, UT of DNH & DD, India

^b Department of Commerce, Smt. Devkiba Mohansinhji Chauhan College of Commerce & Science (University of Mumbai),
Silvassa 396230, UT of DNH & DD, India

^cCentral Library, GLA University, Mathura, U.P.,

Abstract:

This study offers a bibliometric analysis of global research contributions at the intersection of sustainable development and green library initiatives from 2000 to 2025, with a focus on open-access literature. Drawing on data from the Scopus database, the study analyzed 1,008 open-access records across various document types, languages, and publication stages. The analysis revealed a significant growth in scholarly interest, particularly from 2020 onwards, with the highest number of contributions appearing in final-stage journal articles and conference proceedings. Prominent subject areas included Social Sciences, Computer Science, Arts and Humanities, and Business, highlighting the interdisciplinary nature of green library research. The United States, India, the United Kingdom, and South Africa emerged as leading contributing countries, supported by institutions such as the University of South Africa and the University of Illinois Urbana-Champaign. Key sponsoring bodies included the National Science Foundation, European Commission, and Horizon 2020 Programme. Frequently occurring keywords such as "Sustainable Development," "Digital Libraries," and "Library Services" underscored evolving themes aligned with Sustainable Development Goals (SDGs). The findings demonstrate a global shift toward sustainability-focused library services and the increasing role of academic institutions and funding bodies in shaping environmentally responsible library practices.

Keywords: Sustainable Development, Digital Libraries, Library Services,

1. Introduction :

Libraries have consistently acted as catalysts for promoting education, equity, and access to information, playing an essential role in supporting intellectual and social development within communities. In recent years, their mission has broadened as libraries actively adopt environmentally responsible practices, aligning with global efforts to address sustainability (Liu & Wang, 2022). Increasingly, library initiatives are strategically mapped to the United Nations Sustainable Development Goals (SDGs), emphasizing their contributions to quality education, community engagement, and environmental stewardship (United Nations, 2023). These changes highlight a shift in the perception of libraries from static knowledge repositories to dynamic hubs driving sustainable transformation. This study employs a bibliometric approach to examine the worldwide research landscape related to green and sustainable library initiatives. It provides an in-depth analysis of scholarly publications from 2000 to 2025, capturing the evolution of sustainability within library theory and practice over this period.

2. Objective of the Study:

The main objective of this study is to offer a comprehensive bibliometric analysis of global research trends related to sustainable development and green library practices spanning the years 2000 to 2025. This analysis seeks to identify patterns in the annual growth and volume of scholarly publications focused on green library initiatives that align with the broader sustainability agenda and the United Nations Sustainable Development Goals (SDGs) (Kumar & Kaur, 2022). In addition, the study aims to highlight the most prolific contributors—authors, institutions, countries, and funding agencies—actively shaping this growing field. Attention is given to examining how research output is distributed across subject disciplines, document formats, and different stages of publication to understand the landscape's diversity and reach. The investigation also explores thematic structures and emerging trends by analyzing keyword co-occurrence, collaboration networks, and citation patterns, thereby revealing new directions and research clusters within the domain (Singh et al., 2024). Ultimately, the findings are expected to provide valuable insights into the evolving role of libraries as advocates for environmental sustainability and their significant contributions to ongoing global sustainability discourse (IFLA, 2025).

3. Research Methodology:

This study employs a bibliometric analysis to investigate the scholarly landscape related to sustainability in libraries, focusing on green and eco-library practices.

3.1. Data Source

The bibliometric data were sourced from the Scopus database, which is recognized as one of the largest and most reliable abstract and citation databases of peer-reviewed literature. Utilizing Scopus ensures the comprehensiveness and credibility of the dataset (Salleh & Anderson, 2023).

3.2. Search Strategy

A precise and structured search query was developed to retrieve relevant publications on sustainability in libraries. The search string combined keywords with Boolean operators to capture literature from 2000 to 2025, formulated as follows:

TITLE-ABS-KEY-AUTH (sustainab* AND (library OR librari* OR "green library" OR "eco-library")) AND PUBYEAR > 1999 AND PUBYEAR < 2026. To refine the dataset towards scholarly articles, document types such as textbooks, letters, editorials, short surveys, discussion papers, errata, notes, and corrections were excluded. Additionally, the search was limited to specific subject areas including social sciences, computer science, and arts to align with the study's thematic scope (UCL Library Guides, 2019; Salleh & Anderson, 2023).

3.3. Publication Output by Year Related to Sustainability and Libraries:

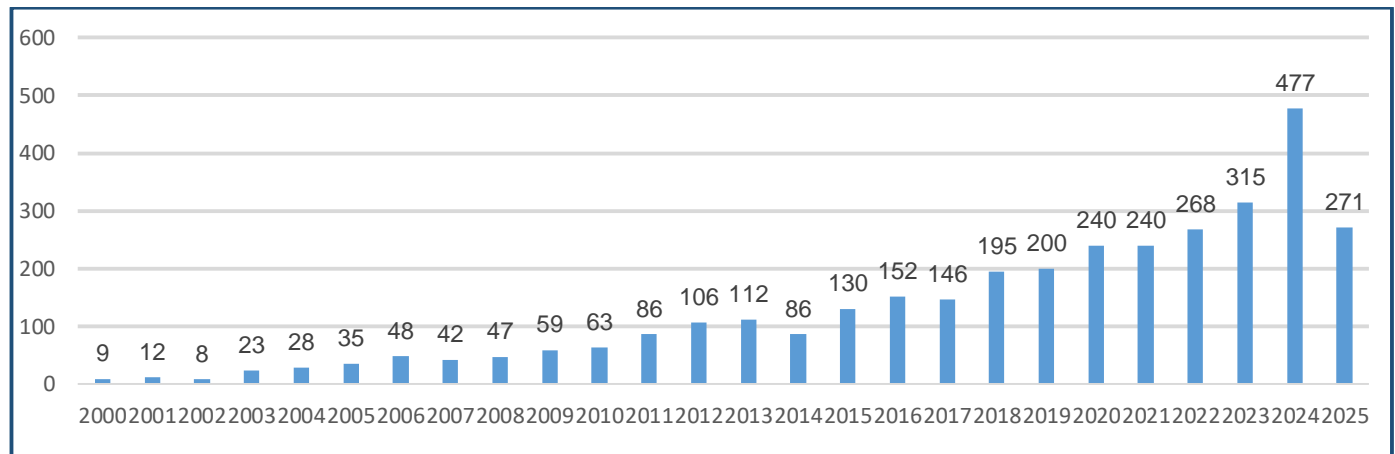


Fig.1 Yearly Growth of Publications

The Figure 1 shows the publication trend on sustainability in libraries from 2000 to 2025. In the early years, output was low, but a steady rise began around 2005. A significant surge is seen after 2015, with the highest number of publications in 2024 at 477. This growth reflects increasing academic interest and global focus on sustainable practices in libraries. Though 2025 shows a slight dip, the overall trend highlights strong and ongoing engagement with this topic.

3.4. Most Productive Authors in the Field of Library Sustainability (2000–2025):

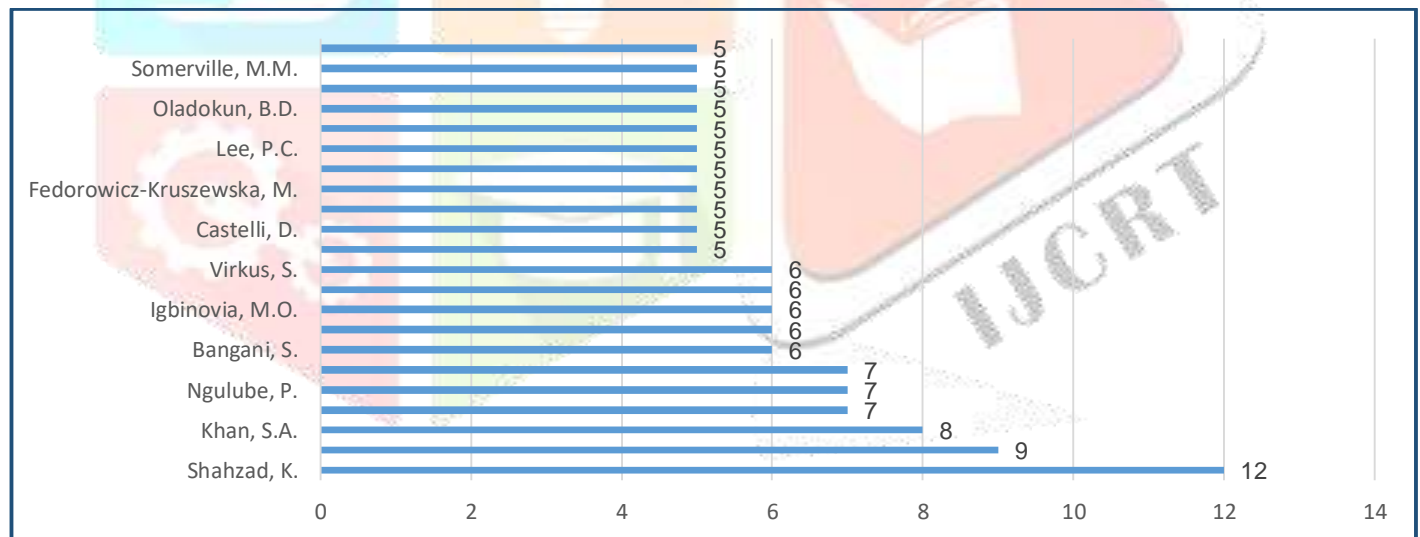


Fig.2: Most Productive Authors

The Figure 2 highlights the top contributing authors in the field of sustainability in libraries based on the number of publications indexed in Scopus between 2000 and 2025. Shahzad, K. leads with 12 publications, followed by Choudhury, G. with 9, and Khan, S.A. with 8. Several other researchers, including Ngulube, P., Osuchukwu, N.P., and Bangani, S., also show consistent scholarly engagement with 5 or more publications each. This distribution indicates a diverse group of active researchers contributing significantly to the growing body of literature on sustainable library practices.

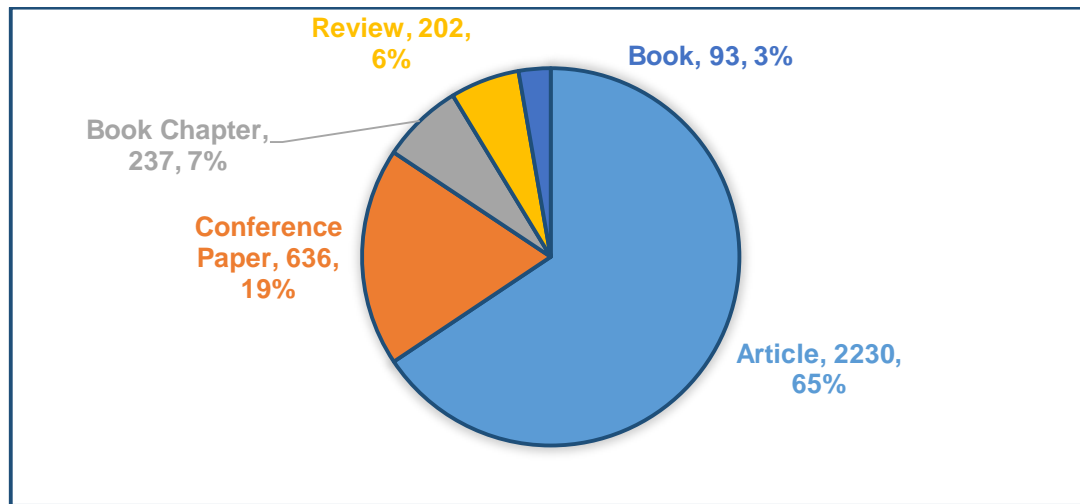


Fig. 3.: Type of Documents

The Figure 3 presents the distribution of publications on sustainability in libraries by document type. The majority of contributions are in the form of journal articles (2,230), indicating a strong preference for peer-reviewed scholarly communication. Conference papers (636) represent the second most common type, highlighting active discussions in academic and professional forums. Other notable formats include book chapters (237), review articles (202), and books (93). This variety reflects the multidimensional nature of the topic and the diverse platforms through which researchers disseminate their work.

3.6. Country-wise Distribution of Publications on Sustainability in Libraries:

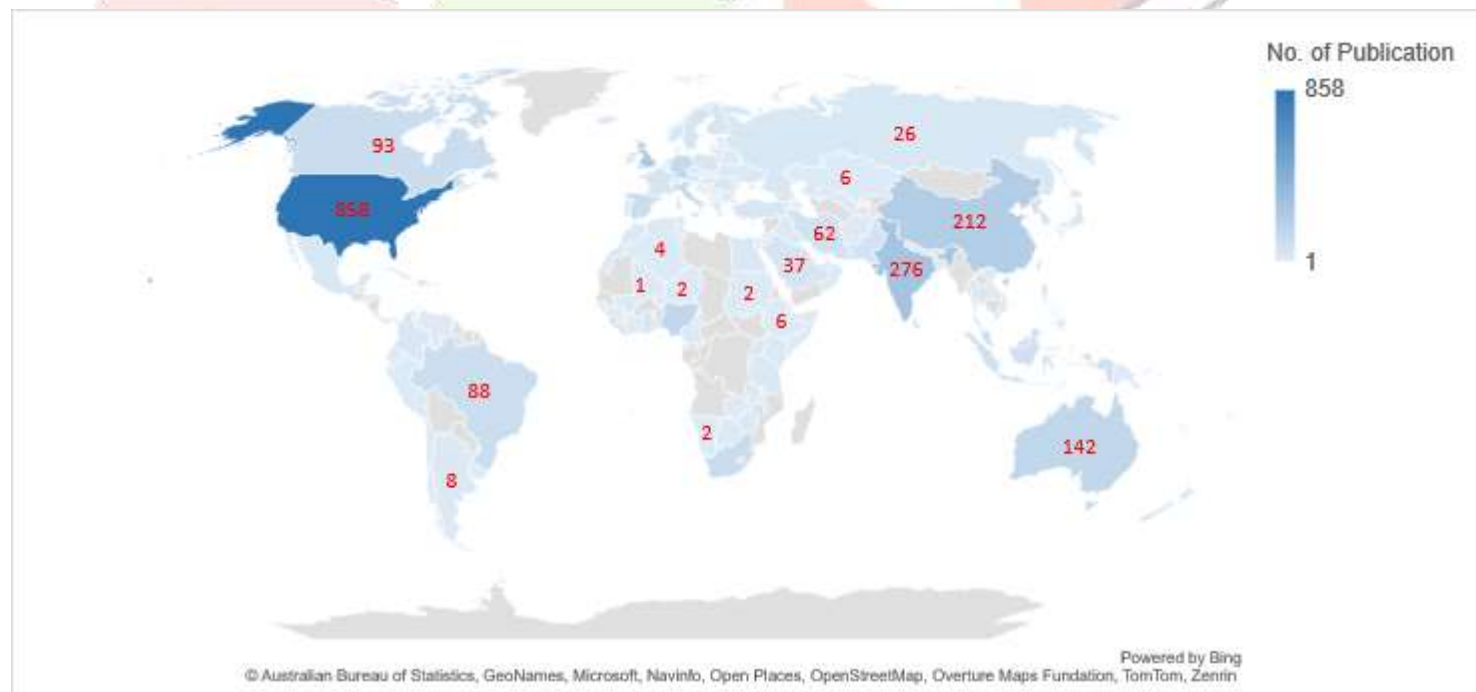


Fig. 4. Country wise publications

Figure 4 presents the geographical distribution of scholarly publications on sustainability in libraries across various countries between 2000 and 2025. The United States leads with 858 publications, followed by India (276), the United Kingdom (249), China (212), and Australia (142)—indicating strong research contributions from both developed and emerging economies. Notably, countries such as Nigeria, South Africa, and

Malaysia also show significant participation, reflecting a global interest in sustainable practices within the library and information science domain. The broad representation across over 100 countries highlights the global relevance and interdisciplinary appeal of sustainability in libraries.

3.7. Leading Source Titles Publishing on Sustainability in Libraries:

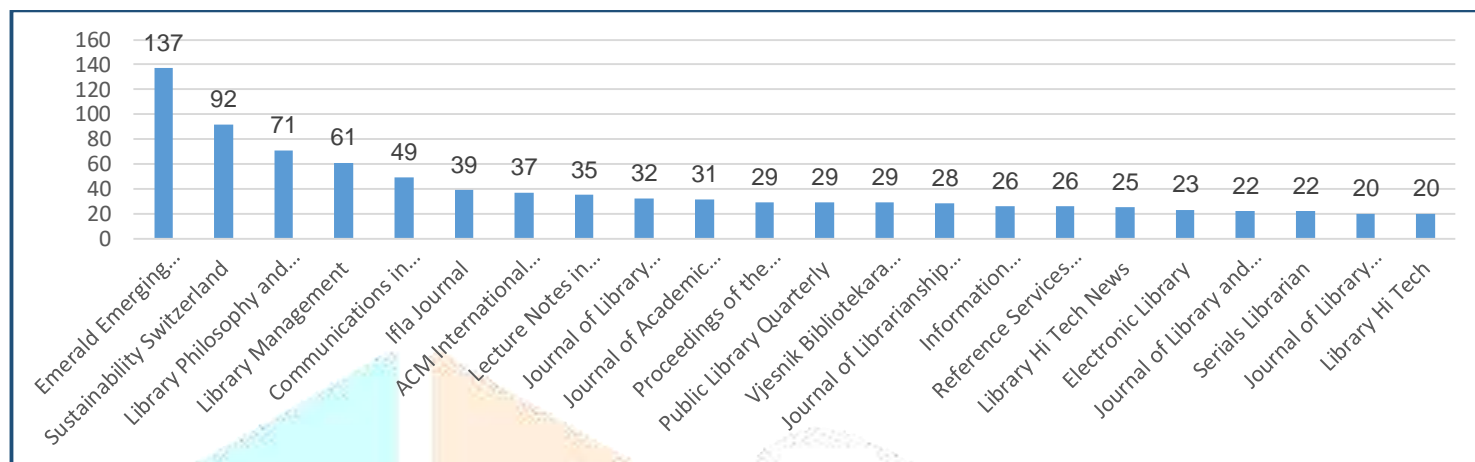


Fig. 5: Top source of publications

Figure 5 lists the top journals and conference proceedings that have published the highest number of documents related to sustainability in libraries from 2000 to 2025. Emerald Emerging Markets Case Studies tops the list with 137 publications, followed by Sustainability (Switzerland) with 92, and Library Philosophy and Practice with 71. Several library and information science journals such as Library Management, IFLA Journal, and Journal of Academic Librarianship are also prominent contributors. The presence of conference proceedings and interdisciplinary sources like *Communications in Computer and Information Science* and *Lecture Notes in Computer Science* reflects the diverse scholarly interest and cross-disciplinary nature of sustainability research in the library domain.

3.8. Categorization of Open Access Publications in Sustainability and Library Research:

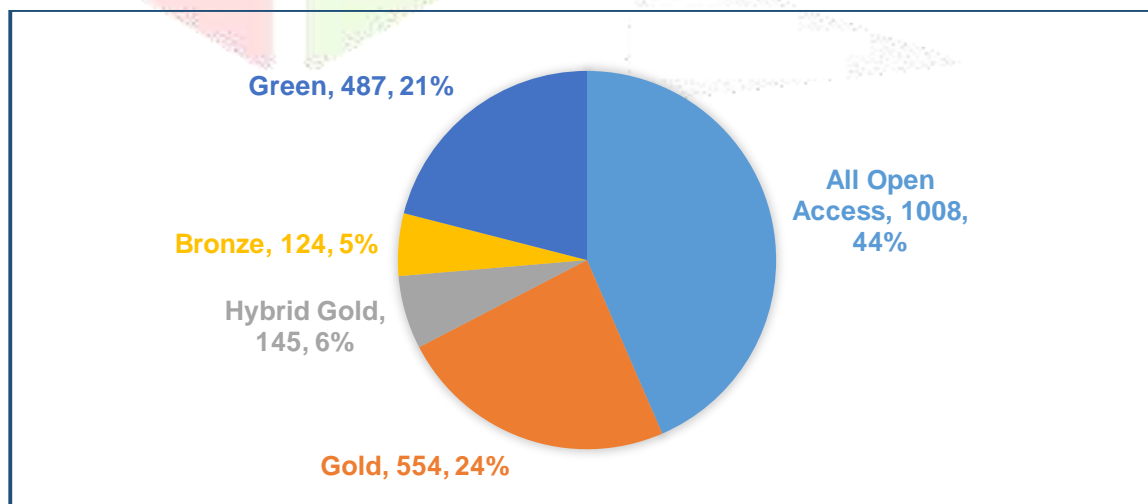


Fig. 6: Categorization of Open Access Publications

Figure 6 presents the distribution of publications related to sustainability in libraries based on their open access types. Out of the total dataset, 1,008 publications are available in some form of open access. Among

these, Gold Open Access accounts for the largest share (554 publications), indicating that a significant portion of the research is published in fully open access journals. Hybrid Gold access includes 145 publications, representing articles made open access within subscription-based journals. Bronze access includes 124 publications, which are temporarily or partially free to read without a clear license. Additionally, 487 publications are available through Green Open Access, typically via institutional or subject repositories, suggesting a strong inclination towards self-archiving practices in this field.

4. Conclusion:

The body of research focusing on sustainability in libraries has shown steady growth, particularly from 2010 onward, culminating in a peak of publications around 2024. Journal articles constitute the majority of scholarly communication in this field, complemented by conference papers, book chapters, and reviews, reflecting a diverse and robust research output. Globally, over 100 countries have contributed to this domain, highlighting widespread international interest and cooperation. Leading nations such as the United States, India, the United Kingdom, China, and Australia have been especially prolific in publication output, demonstrating strong institutional and academic engagement. Influential journals like *Library Philosophy and Practice*, *Library Management*, and *Sustainability* (Switzerland) have been central to disseminating key research findings. The growing body of work features notable authors who have steadily contributed to advancing green library practices. The thematic focus has broadened to include sustainable building designs, energy efficiency, sustainable information services, digital transformation, and policy advocacy. Importantly, this research area aligns closely with the United Nations Sustainable Development Goals, chiefly SDG 4 (Quality Education), SDG 11 (Sustainable Cities and Communities), and SDG 13 (Climate Action), underscoring the increasing role of libraries in the global sustainability agenda (Smith et al., 2024; IFLA, 2018).

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