

Analysis of Research Trends in Library Services: A Bibliometric Study Based on Scopus Data from 2020 to March 2025



Analisis Tren Riset Layanan Perpustakaan: Studi Bibliometrika Berbasis Data Scopus Periode 2020 -Maret 2025

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Abstract

Background: Library services are a crucial element continuously adapting to the evolving information needs of the digital age, supporting the successful fulfillment of a library's vision and mission. Understanding current research trends in this field benefits researchers, librarians, and policymakers by helping to identify key topics and data-driven strategies for service development and policy formulation through relevant studies. **Purpose:** This study aims to analyze research trends in library services during the period from 2020 to March 2025, based on 842 publications retrieved from the Scopus database. **Method:** This study employed a bibliometric analysis using Biblioshiny and VOSviewer to identify patterns in publication productivity, the most prolific countries, author collaborations, contributing institutions or organizations, leading sources of publication, and dominant phrases in the field of library services. **Result:** The findings indicate fluctuations in publication volume, with an increase observed from 2020 to 2021, followed by a significant decline from 2022 to March 2025. The United States, India, and Nigeria emerged as the most productive countries, demonstrating a relatively high level of international collaboration. Ajani, Yusuf Ayodeji was identified as the most prolific author. The majority of publications originated from journals focusing on library technology and media services, such as *Library Philosophy and Practice*. Institutions like the University of The Punjab were key contributors to library services publications, and a phrase analysis revealed that "library" is a primary object of study. **Conclusion:** Research trends in library services show a clear shift towards leveraging technology and digitalization to effectively and efficiently serve users. Furthermore, findings regarding international collaborations involving authors from various countries and the presence of prolific authors highlight the importance of collaboration in fostering future research growth and quality.

Keywords: Bibliometric Analysis, Library Services, Research Trends, Scopus.

Abstrak

Latar Belakang: Layanan perpustakaan menjadi elemen penting yang terus beradaptasi dengan perubahan kebutuhan informasi di era digital guna mendukung keberhasilan visi dan misi perpustakaan. Memahami tren riset terkini dalam topik ini akan bermanfaat bagi peneliti, pustakawan dan pembuat kebijakan untuk mengidentifikasi topik-topik serta strategi berbasis data pengembangan layanan dan mengambil kebijakan melalui penelitian-penelitian mengenai topik tersebut. **Tujuan:** Penelitian ini bertujuan menganalisis tren riset layanan perpustakaan dalam periode 2020 hingga Maret 2025 dengan menggunakan 842 publikasi yang diperoleh dari basis data Scopus. **Metode:** Metode yang digunakan adalah analisis bibliometrik dengan bantuan Biblioshiny dan Vosviewer untuk mengidentifikasi pola produktivitas publikasi, negara dengan publikasi terbanyak, kolaborasi penulis, institusi atau organisasi yang berkontribusi, sumber publikasi utama, serta frasa dominan dalam topik layanan perpustakaan. **Hasil:** Hasil menunjukkan fluktuasi jumlah publikasi dengan peningkatan pada tahun 2020 hingga 2021, namun terjadi penurunan yang signifikan pada tahun 2022 hingga Maret 2025. Amerika Serikat, India, dan Nigeria menjadi negara paling produktif dengan tingkat kolaborasi internasional yang cukup tinggi. Penulis paling produktif adalah Ajani, Yusuf Ayodeji. Sumber publikasi terbanyak berasal dari jurnal yang berfokus pada teknologi perpustakaan dan layanan media yaitu *Library Philosophy and Practice*. Institusi seperti University of The Punjab menjadi kontributor utama dalam publikasi layanan perpustakaan dan analisis frasa menunjukkan "library" menjadi objek studi utama.

Kesimpulan: Tren riset layanan menunjukkan adanya pergeseran fokus yang jelas ke arah pemanfaatan teknologi dan digitalisasi dalam upaya melayani pengguna secara efektif dan efisien. Temuan mengenai kolaborasi internasional yang melibatkan penulis dari berbagai negara dan adanya penulis produktif menyoroti pentingnya kolaborasi dalam mendorong pertumbuhan dan kualitas riset di masa depan.

Kata kunci: Analisis Bibliometrik, Layanan Perpustakaan, Tren Penelitian, Scopus

I. INTRODUCTION

Background. Library services have long been recognized as a crucial foundation for ensuring both the effectiveness and long-term sustainability of libraries. In the early stages, the focus of library service practices was largely limited to facilitating access to collections for those who were able to visit the library directly, reflecting the traditional role of libraries within their communities. (Nisa, 2023). Rahmah (2018) Library services involve the provision of information and facilities to library users, enabling them to obtain the information they need in an optimal manner across various media. Library services play a significant role in facilitating users' access to the information they require by effectively utilizing information resources and retrieval tools. In practice, library services involve two primary parties: librarians, who act as service providers, and library users, who receive those services. The function of library services extends beyond merely fulfilling information needs; it also encompasses ensuring security, enhancing user convenience, and comprehensively supporting users' broader interest. Along with the advancement of information technology, library services have undergone a transformation from conventional service models to hybrid systems and, in many cases, fully digital services. This transformation is closely associated with shifts in user behavior, characterized by increasing demands for information access that is fast, convenient, and flexible. Albaburrahim and Wahyudi (2022) argue that a digital library constitutes a service system within libraries that optimizes technological infrastructure for the organized digital management of collections, thereby enabling modern access to information for library users. In this regard, libraries are required to continuously adapt and innovate in response to technological developments, particularly in providing services that are relevant, adaptable, and effective in addressing their users' needs.

Problem Statement. Library services including electronic lending systems, online catalog services (OPAC), digital repository services, and other technology based services have undergone significant transformation and have become integral components of modern libraries. However, this digital transformation in the library sector has also introduced a number of challenges, including the integration of libraries with digital technologies, the preparedness of human resources, particularly librarian training to address technical issues and service innovation, data security concerns, service innovation in library management, and the adaptation of services to immersive learning environments that integrate technology to enhance user engagement with library collections (Oktavia, 2024).

To address the challenges arising from digital transformation, libraries require broader knowledge and a deeper understanding to navigate the evolving dynamics of digital library services. These changes have also stimulated growing academic interest in library services as an object of scholarly inquiry. Therefore, a comprehensive mapping of research trends and the developmental trajectory of studies in this field is essential. Such mapping serves as a fundamental basis for addressing existing challenges and formulating effective service strategies for libraries' future.

Previous Literature Review. Several previous studies have applied bibliometric analysis to examine the development of research in specific fields. One notable study conducted by Armanul Haque (2022), entitled *Library Services during COVID-19 Pandemic: A Bibliometric Analysis and Knowledge Mapping* published in *Library Philosophy and Practice*, explored the identification and mapping of library service-related publications indexed in the Scopus database through bibliometric analysis, particularly in the context of library services during the COVID-19 pandemic. A total of 57 records were collected from Scopus, covering documents published between January 2020 and August 2021. The study found that 90% of publications during the pandemic were associated with digital libraries, reflecting a substantial shift toward virtual and digital services. This transformation not only expanded librarians' roles but also reinforced libraries' relevance in adapting to changing information needs during the pandemic (Armanul Haque, 2022).

The study conducted by Armanul Haque (2022) is highly relevant to the present research, as it specifically analyzed studies on library services during the COVID-19 pandemic from 2020 to August 2021. Similarly, the present study employs data collected from 2020 to March 2025. The methodological approach is comparable, using bibliometric analysis based on Scopus-indexed data and VOSviewer. Despite its relevance, the study differs in its temporal scope and its explicit focus on the COVID-19 pandemic. In contrast, the present study extends the analysis of library service research through March 2025, thereby offering a broader, more longitudinal perspective on the evolution of research in the post-pandemic period, without being explicitly confined to the pandemic context.

A study conducted by Ridwan and Ike (2024), entitled *Tren Penelitian Layanan Perpustakaan Melalui Pemanfaatan Repositori Institusi dengan Analisis Bibliometrik Berbasis Data Scopus*, published in *Media Informatika*, also employed descriptive bibliometric analysis to examine research trends in library services through the utilization of institutional repositories. The study analyzed publications spanning from 1982 to 2023 using the keywords "library services" AND "institutional repositories", resulting in a dataset of 574 documents. The data were further analyzed using VOSviewer to map the developmental trends of research on library services through repository utilization. The findings demonstrated a fluctuating increase in publication output over time and identified the journals with the highest number of publications in this field, the most productive authors and countries, as well as co-word mapping that illustrated the conceptual structure of the research domain.

The study by Faridan and Lawanda (2024) is particularly relevant because it utilized descriptive bibliometric analysis with the Scopus database to examine research trends in library services, specifically focusing on the "utilization of institutional repositories" from 1982 to 2023. While both studies share a methodological approach and partially overlap in their periods of analysis, the present study adopts a broader thematic scope by investigating research trends in library services more generally. Additionally Faridan & Lawanda (2024) analysis concluded at the end of 2023 and therefore does not account for research developments up to March 2025.

Dhinosa and Faizah (2024) conducted a bibliometric analysis titled "Bibliometric Analysis: Library Services for Individuals with Cognitive Disabilities" using the Google Scholar database, with data retrieved via the Publish or Perish software. The dataset encompassed publications from 2020 to 2024, identified using the keywords "library services" AND "disability cognitive." The study employed a descriptive, quantitative methodology and bibliometric analysis, resulting in the identification of 100 article titles. VOSviewer software was used to analyze trends, relationships, and patterns within the literature. The results revealed a substantial increase in publications in 2020, with 46 articles published, primarily attributed to the Covid-19 pandemic, followed by a marked decline from 2021 to 2024. Additionally, the study concluded that research success is determined not only by productivity but also by the quality of collaboration among authors, countries, and institutions.

The study by Dhinosa & Faizah (2024) is suitable because it applies bibliometric analysis to library services and examines the increase in publications from 2020 to 2024, during which an initial rise and subsequent decline in publication trends were observed, consistent with the findings of the present study. The difference lies in the database used. Dhinosa and Faizah (2024) used the Google Scholar database via the Publish or Perish software, producing a dataset that differs from that in Scopus. In addition, the focus of their study is highly specific, namely "library services for individuals with cognitive disabilities." This study provides valuable insights into publication dynamics within a specialized field; however, it does not represent global and general research trends in library services.

State of The Art. This study examines the latest research trends in library services, covering the period from 2020 to March 2025. Previous bibliometric studies on library services generally examined time spans either prior to or during the early stages of the pandemic and did not include data from early 2025. This period encompasses the pre-pandemic, post-pandemic, and recent developments in information technology within the field of library services, thereby offering a more comprehensive perspective than earlier studies that covered different time frames. In addition, previous studies tended to focus on specific topics, such as digital libraries, institutional repositories, and disability-related services, whereas the present study analyzes research trends from a broader perspective. This approach provides a macro-level overview of global research trends and patterns in library services.

The data examined in this study were derived from the Scopus database, widely recognized for its extensive coverage of high quality, peer-reviewed journals worldwide. This provides a representative overview of the global research landscape on the topic of "library services." The use of the Scopus database also enables comparative analysis with other studies that use the same database, as well as with similar studies that employ different databases. Furthermore, the combination of analytical software, namely Biblioshiny and VOSviewer, provides a more robust understanding of publication productivity dynamics, patterns of collaboration among authors, countries, and institutions, and thematic shifts in global library services research.

Purpose. This study aims to analyze research tendencies in library services, identify underexplored research gaps, encourage collaboration among countries and authors, and assist libraries in identifying data-driven strategic references for decision-making related to future library development. In addition, this study is hoped to provide guidance for other researchers in developing relevant topics within the field of library services.

This study utilizes publication data from the Scopus database covering the period from 2019 to March 2025. This time frame was chosen to account for a major global event, namely the Covid-19 pandemic, which significantly influenced the direction and intensity of research in this field. The Covid-19 pandemic accelerated libraries' digital transformation. Therefore, this analysis was conducted to identify patterns in publication productivity, author productivity, institutional cooperation, author collaboration, and research trends related to library services.

II. METHODS

This study employs a descriptive bibliometric method. Bibliometric methods are quantitative approaches commonly used in library and information science to examine the literature of a particular topic and identify publication patterns, author collaboration, and thematic trends within a field of study. According to Adrian (2023), bibliometric analysis is a quantitative method for analyzing bibliographic data in articles or journals. Furthermore, Donthu et al., (2021) stated that bibliometric analysis is a popular and well-established analytical method for analyzing large volumes of scientific data, enabling researchers to

uncover the nuances of research evolution and highlight emerging areas within a specific field.

This analysis is often intended to identify the most productive research components within a particular field, including authors, countries, institutions, and journals (Donthu et al., 2021). Bibliometric analysis generally encompasses a broad scope, as it is specifically designed to handle large volumes of data. Such analysis is typically conducted when the dataset consists of hundreds or thousands of records (500 or more). In contrast, datasets containing only dozens or 100-300 records are still considered relatively small and may not warrant the application of bibliometric analysis (Donthu et al., 2021).

A total of 842 publications on library services, published between 2020 and March 2025, were analyzed. Data were obtained from the Scopus database, which is known for its comprehensive coverage of high-quality journals. The search strategy employed the keywords "library AND services" and incorporated automatic filters for publication year (2020–March 2025), subject area (Social Science), publication stage (Final), source type (Journal), language (English), and open access status (all open access). Since these filters were applied during data retrieval, additional manual data cleaning was not required. The relevant research data were then exported from Scopus. The exported data were stored as a Research Information System (RIS) citation file, which was subsequently imported into the Biblioshiny software. Biblioshiny was used to perform basic bibliometric analyses, including publication productivity patterns such as the number of publications by country, the identification of productive authors and institutions, and the analysis of major publication sources. In addition, the Scopus file was downloaded in CSV (Comma-Separated Values) format and imported into VOSviewer to visualize network patterns within the retrieved data, including author affiliation networks and keyword co-occurrence networks. VOSviewer was also used to analyze relationships among institutions and authors, as well as to identify thematic clusters.

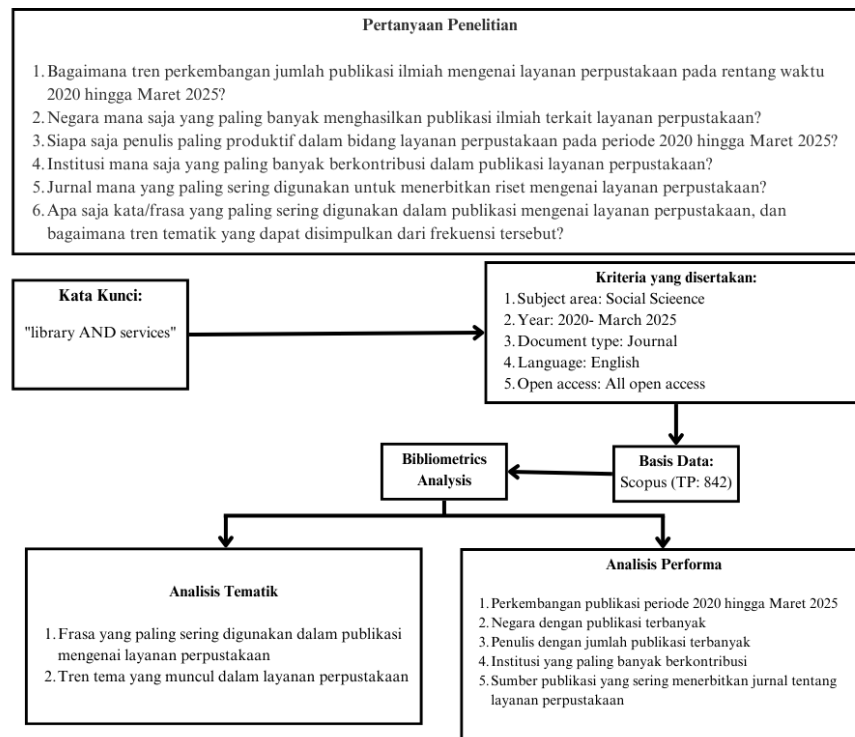
This analysis was adjusted to the parameters of each analysis type to ensure results were more relevant. In the country-level analysis, VOSviewer co-authorship analysis was employed to map collaboration among authors, countries, and organizations. The maximum number of authors displayed was limited to 25, with a minimum threshold of three authors per document. This threshold was selected to visualize authors with relatively high productivity and consistent contributions. For co-authorship analysis at the organizational level, a minimum of 3 documents and a maximum of 25 organizations were used. At the country level, a minimum threshold of 25 documents and a maximum of 25 countries were established. This criterion was intended to ensure that only countries with dominant contributions were included in the visualization.

For co-occurrence analysis of keywords, including keywords, authors' keywords, and index keywords, a minimum threshold of 10 occurrences and a maximum of 25 keywords were set. This was done to ensure that the visualization highlighted only the most frequently used keywords, which could represent the dominant themes emerging in library services research from 2020 to March 2025. For authors, organizations, and countries, a minimum threshold of 25 documents with at least three citations was applied. This criterion was intended to ensure that the authors, organizations, and countries visualized in the analysis had significant contributions within the field.

Co-citation analysis was employed to evaluate relationships among frequently co-cited references and sources. At the reference level, only documents with at least 31 citations and at least 5 documents were included. At the source level, a threshold of 20 citations was applied. These selection criteria ensured that the co-citation map concentrated on the most influential literature. For term analysis, only terms appearing at least 25 times in titles or abstracts were visualized.

The application of these parameters produces relevant visualizations and minimizes noise from low-frequency items. Integration of Scopus data with Biblioshiny and VOSviewer provides a comprehensive overview of research trends in library services.

Figure 1.
Research Workflow



Source: Adapted from Winoto et al., 2024

Table 1.
Data Selection Categories

Category	Information
Research database	Scopus
Searching keywords	“library AND services”
Sample size	842
Searching period	2020- Maret 2025
Language	English
Document type	Article
Data extraction	Export with full records and cited references in RIS and CSV format
Tools	Biblioshiny and VosViewer

Source: Research Data (2025).

Data were obtained from the Scopus database due to its extensive international coverage. The search used the keywords “library AND services,” yielding 842 article-type publications from 2020 to March 2025. To maintain consistency and facilitate data analysis, only English-language articles were selected. Data extraction was performed in RIS and CSV formats as full records with cited references to enable comprehensive citation network analysis.

In the analysis stage, Biblioshiny and VOSviewer were employed. Biblioshiny facilitated bibliometric analyses, including annual publication trends, identification of leading authors, organizations, and countries, and visualization of key terms using word clouds. VOSviewer enabled advanced visual mapping to examine author collaboration networks, inter-

institutional and international partnerships, keyword co-occurrence, co-citation patterns, and thematic clusters.

III. RESULTS AND DISCUSSION

The following are the results of the analysis :

Table 2.
Main Data

Description	Results
Main Information About The Data	
Time Span	2020 – March 2025
Sources (Journals, Books, Etc.)	141
Number Of Documents	842
Annual Growth Rate (%)	-44.39
Average Document Age	3.24
Average Citations Per Document	4.925
Number Of References	25391
Document Contents	
Keywords Plus (Id) (Automatically Generated Keywords From The Scopus Reference List)	2100
Author’s Keywords (De) (Keywords Provided By Article Authors)	2293
Authors	
Number Of Authors	1860
Authors Of Single-Authored Documents	200
Author Collaboration	
Number Of Single-Authored Documents	222
Average Number Of Authors Per Document	2.56
International Co-Authorship (%)	10.21
Document Types	
Articles	842

Source: Processed by the authors from Scopus data analyzed using Biblioshiny (2025).

Based on Table 2, the primary data were obtained from the Scopus database and include 842 documents retrieved from 141 publication sources, covering the period from 2020 to March 2025. This volume suggests that library services have received considerable scholarly attention over the past five years. The annual growth rate was recorded at -44.39%. This negative growth value indicates a decline in the number of publications in 2025; however, the 2025 data cover only the first three months and therefore do not yet fully reflect the publication trends for the entire year.

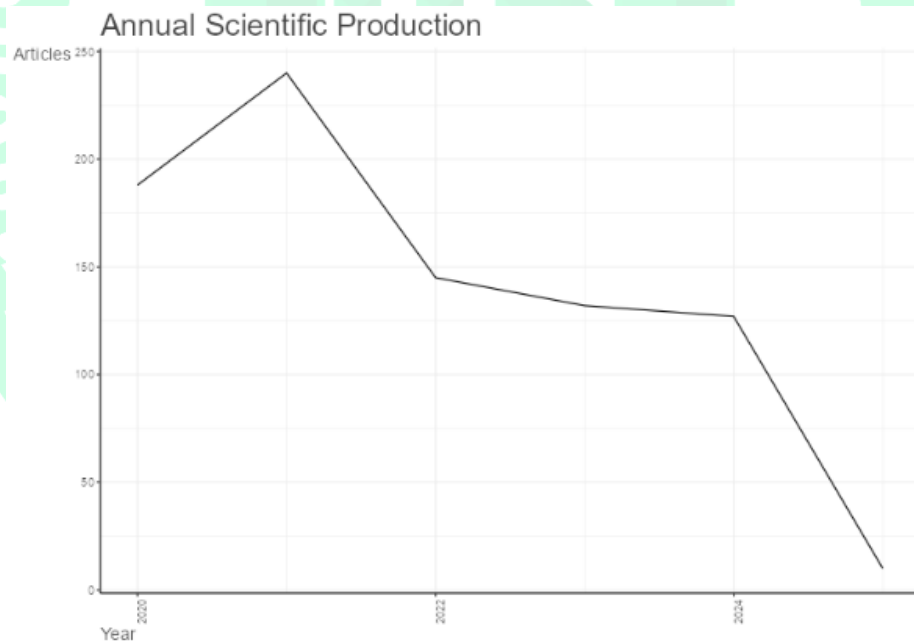
The moderate age of the documents was 3.24 years, indicating that most of the articles in this dataset are relatively recent. This is closely associated with the relatively low average citation per document, which was recorded at 4.925. The younger an article is, the lower its probability of being cited, because it has not circulated long enough within the academic domain to accumulate citations. This finding also suggests that the documents remain highly relevant and represent recent, up-to-date research. Given the current development, with the average document age still moderately young at approximately three years, the dataset reflects an active and evolving research area. Furthermore, the total number of references across the dataset reached 25,391, indicating that research in library services is supported by a broad and substantial literature base.

The system identified 2,100 Keyword Plus (ID), which are additional keywords automatically generated by the Scopus indexing system from the titles of cited articles. In addition, 2,293 Author’s Keywords (DE) were assigned by the authors. The substantial quantity of both keyword types indicates that the field encompasses a broad spectrum of topics and research interests.

In the authorship section, a total of 1,860 authors were involved in the publication of the articles, of which 200 were single authors. Overall, 222 documents were identified as single-authored publications. This indicates that several individual authors produced more than one publication during the period from 2020 to March 2025. These findings suggest that the majority of research in this field has been conducted through collaboration among authors. The average number of authors per document was 2.56, suggesting that research in this area is brought out collaboratively rather than individually. The international collaboration rate was 10.21%, indicating that only a small proportion of studies involved cross-country collaboration, while most library service research remains dominated by domestic collaboration. Nevertheless, international collaboration reflects the existence of cross-national academic networks in the field of library services.

The document type analyzed in this study comprises 842 journal articles, indicating that the analysis is based entirely on journal publications as the primary form of scientific output in library service research. This strengthens the reliability of the analysis, as journal articles generally experience rigid peer review before publication.

Figure 2.
Development of Articles Published During the Period 2020–March 2025



Source: Compiled by the authors from Scopus data analyzed using Biblioshiny (2025).

Tabel 3.
Year and Number of Articles

Year	Articles
2020	188
2021	240
2022	145
2023	132

Year	Articles
2024	127
2025 (January–March)	10

Source: Prepared by the authors based on Scopus data analyzed using Biblioshiny (2025).

Table 3 and Figure 2 present annual publication trends from 2020 to March 2025. Table 3 details the number of articles published each year, and Figure 2 depicts the overall trend. In 2020, 188 articles were published, rising to a peak of 240 in 2021. Subsequently, publication numbers declined to 145 in 2022, 132 in 2023, and 127 in 2024. By March 2025, 10 articles had been published.

Based on these data, it can be observed that the annual growth in the number of article publications showed an initial increase followed by a consistent decline. The first increase occurred from 2020 to 2021, rising from 188 articles to 240 articles. This surge was closely associated with the COVID-19 pandemic, which compelled libraries to transform from conventional models into hybrid or digital libraries. These circumstances prompted the emergence of various studies examining the impacts of transformation, adaptation, and innovation in library services during the pandemic.

In the following years, the number of article publications declined consistently through 2025. In 2022, the total number of published articles was 145, followed by 132 in 2023 and 127 in 2024. In 2025, the number of articles published up to March was only 10. Compared with the 2024 figure, this appears to represent a significant decrease. However, such a comparison is not entirely accurate, as the 2025 data only covers the first three months of the year. Using a simple normalization approach by calculating the average number of publications per month, with 10 documents over three months, the projected total publication output for the full year would reach approximately 40 documents.

The diagram visualization in Figure 2 further supports this pattern. The trend line shows a peak in 2021, marking the year with the highest number of publications. The data point in the diagram for 2025 seems significantly lower; however, when annual projections are taken into account, the graph still shows a decline, although not an extreme one.

This analysis was conducted to identify the countries with the highest publication output among 65 countries, which were divided into seven clusters. Each cluster represents the interactions among authors based on their collaborative relationships, with a minimum threshold of 25 research documents per country.

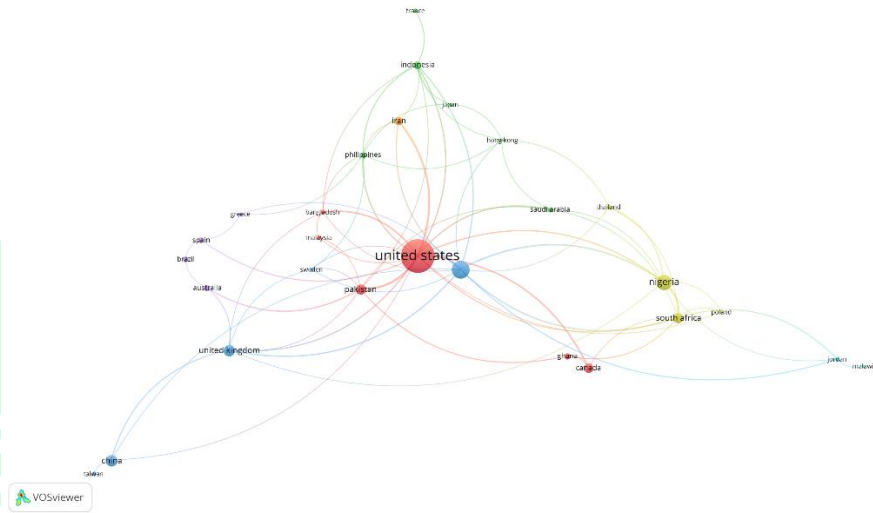
Table 4.
Frequency of Articles by Country

Region	Freq
USA	820
INDIA	199
NIGERIA	165
CHINA	110
UK	99
PAKISTAN	76
IRAN	64
CANADA	50
SOUTH AFRICA	49
INDONESIA	40

Source: Prepared by the authors based on Scopus data analyzed using Biblioshiny (2025).

The table above presents the ten countries with the highest publication frequencies. First, the United States (USA) dominates with 820 publications. This domination is likely reinforced by strong research infrastructure and adequate funding. The second-highest contributor is India, with 199 publications, followed by Nigeria with 165. These results indicate the presence of active research contributions from developing countries in the field.

Figure 3.
International Collaboration Network



Sumber: Diolah Penulis dari Data Scopus yang Dianalisis Vos viewer

Figure 3 presents the international collaboration network, segmented into color-coded clusters using VOSviewer. The red cluster comprises Bangladesh, Canada, Ghana, Malaysia, Pakistan, and the United States. The green cluster includes France, Hong Kong, Indonesia, Japan, the Philippines, and Saudi Arabia. The blue cluster consists of China, India, Sweden, Taiwan, and the United Kingdom. The yellow cluster contains Nigeria, Poland, South Africa, and Thailand. The purple cluster encompasses Australia, Brazil, Greece, and Spain. The light blue cluster includes Jordan and Malawi, while the orange cluster represents Iran. The presence of these diverse clusters indicates that library service issues are global in scope and transcend national boundaries.

Table 5.
Scientific Publication Productivity by Country

Cluster	Country	Articles	Total Link Strength	Citations	Average Citations per Article
1	Bangladesh	7	9	27	4,2
	Canada	26	6	244	11,6
	Ghana	12	5	23	1,5
	Malaysia	7	3	20	3,5
	Pakistan	32	18	220	7,3
	United states	327	56	1590	4,7

Cluster	Country	Articles	Total Link Strength	Citations	Average Citations per Article
2	France	7	2	73	23
	Hong Kong	4	6	147	40,3
	Indonesia	17	14	40	2,4
	Japan	5	3	92	0,7
	Philippines	8	11	6	0,4
	Saudi arabia	8	7	67	9,5
3	China	40	5	268	6,3
	India	93	32	282	3,1
	Sweden	5	5	46	11
	Taiwan	7	1	79	-
	United Kingdom	38	14	199	4,7
4	Nigeria	67	19	284	4
	Poland	4	3	31	7,8
	South Africa	32	19	197	4,6
	Thailand	7	5	34	6,5
5	Australia	13	6	77	3,8
	Brazil	10	2	68	2,4
	Greece	5	3	70	18
	Spain	10	4	52	6,8
6	Jordan	6	6	68	7
	Malawi	3	1	5	2,5
7	Iran	20	11	92	5,3

Source: Prepared by the authors based on Scopus data analyzed using Biblioshiny (2025).

The table above shows that authors from the United States have the highest number of published articles, with 327 documents and a total link strength of 56. These publications accumulated 1,590 citations, averaging 4.7 citations per article. The next highest contributor is India, with 93 articles, 282 citations, and an average of 3.1 citations per article. This is followed by Nigeria, with 67 published articles, 284 total citations, and an average of 4.0 citations per article.

Among the three countries with the highest publication output, international collaboration was also relatively high. This finding suggests that issues related to library services are global in nature. Such international collaboration enhances viewpoints and enables the exchange of best practices across countries. These cooperative exchanges have the potential to enhance the quality of library services and foster innovation among the countries involved.

Based on the Scopus data obtained, a total of 1,860 authors were identified. Among them, 200 authors produced only single-authored documents during the study period. Their contributions accounted for 222 documents that did not involve collaboration with other authors. The proportion of single authors is approximately 10.75% of the total authors, indicating that researchers tend to work independently in library service research. The average number of authors per document was 2.56, indicating that most publications involved more than one author. Furthermore, the international collaboration network among authors reached 10.21%, indicating researcher engagement and collaborative networks across countries.

Table 6.
Top 10 Most Productive Authors

No	Author Name	Affiliation	Number of Documents	Total Citations	Average Citations
1	AJANI, YUSUF AYODEJI	University of Abuja	7	105	10,02
2	ADETAYO, ADEBOWALE JEREMY	Adeleke University	7	43	2,9
3	MAHMOOD, KHALID	University of the Punjab	6	57	4,6
4	TELLA, ADEYINKA	University of South Africa	6	107	7,24
5	FERNANDEZ, PETER	The University of Tennessee, Knoxville	5	0	0
6	PETERSEN, DAVID	University of Tennessee Graduate School of Medicine	5	16	0,82
7	ASHIQ, MURTAZA	University of the Punjab	4	77	6,45
8	BÉLANGER, ANNIE	Grand Valley State University	4	3	0,37
9	CHIU, DICKSON K.W.	The University of Hong Kong	4	147	10
10	CORRADO, EDWARD M.	Naval Postgraduate School	4	40	6,6

Source: Prepared by the authors based on Scopus data analyzed using Biblioshiny (2025).

The table above presents the ten most productive authors during the period from 2020 to March 2025. It shows that Ajani, Yusuf Ayodeji, registered the highest publication output, with 7 documents, 105 total citations, and an average of 10.02 citations per document, all affiliated with the University of Abuja. The following section delivers the ten documents with the highest citation counts, as shown in Table 7.

Table 7.
List of Articles with the Highest Citation Counts

No. Citations	Year	Authors	Title	Journal	
1.	64	2023	CHIU, DICKSON K.W.	Instagram For Student Learning And Library Promotions: A Quantitative Study Using The 5e Instructional Model	Aslib Journal Of Information Management

No.	Citations	Year	Authors	Title	Journal
2.	48	2020	CHIU, DICKSON K.W.	Virtual Reality Services In Academic Libraries: Deployment Experience In Hong Kong	Electronic Library
3.	43	2022	MAHMOOD, KHALID	Transformation Of Libraries During Covid-19 Pandemic: A Systematic Review	Journal Of Academic Librarianship
4.	43	2022	ASHIQ, MURTAZA	Transformation Of Libraries During Covid-19 Pandemic: A Systematic Review	Journal Of Academic Librarianship
5.	40	2022	AJANI, YUSUF AYODEJI	Perspectives Of Librarians On Awareness And Readiness Of Academic Libraries To Integrate Artificial Intelligence For Library Operations And Services In Nigeria	Internet Reference Services Quarterly
6.	40	2022	TELLA, ADEYINKA	Perspectives Of Librarians On Awareness And Readiness Of Academic Libraries To Integrate Artificial Intelligence For Library Operations And Services In Nigeria	Internet Reference Services Quarterly
7.	38	2023	CORRADO, EDWARD M.	Embracing Chatgpt: Implications Of Emergent Language Models For Academia And Libraries	Technical Services Quarterly
8.	26	2022	CHIU, DICKSON K.W.	Perceived Quality Of Whatsapp Reference Service A Quantitative Study From User Perspectives	Information Technology And Libraries
9.	23	2022	ASHIQ, MURTAZA	Global Research On Library Service Quality: A Bibliometric Analysis And Knowledge Mapping	Global Knowledge, Memory And Communication
10.	22	2023	AJANI, YUSUF AYODEJI	Libraries In The Metaverse: The Need For Metaliteracy For Digital Librarians And Digital Age Library Users	Library Hi Tech News

Source: Prepared by the authors based on Scopus data analyzed using Biblioshiny (2025).

Table 7 presents the document with the highest citation count: the publication titled "Instagram for Student Learning and Library Promotions: A Quantitative Study Using the 5E Instructional Model," written by Chiu, Dickson K.W., and published in the *Aslib Journal of Information Management* in 2023. This publication has received 64 citations within a relatively short period, from 2023 to 2025. The study focuses on the use of Instagram to promote library services and support learning activities. This topic is highly relevant in light of libraries' ongoing digital transformation. The high citation count of this publication indicates that research utilizing digital media has attracted significant scholarly interest and demonstrates a strong impact in the field of library services.

Table 8.

List of the Top 10 Authors and Their Proportional Contributions

Authors	Articles	Articles Fractionalized
ADETAYO, ADEBOWALE JEREMY	7	2,75
AJANI, YUSUF AYODEJI	7	2,2
MAHMOOD, KHALID	6	1,86666667
TELLA, ADEYINKA	6	3,41666667
FERNANDEZ, PETER	5	5
PETERSEN, DAVID	5	2,75

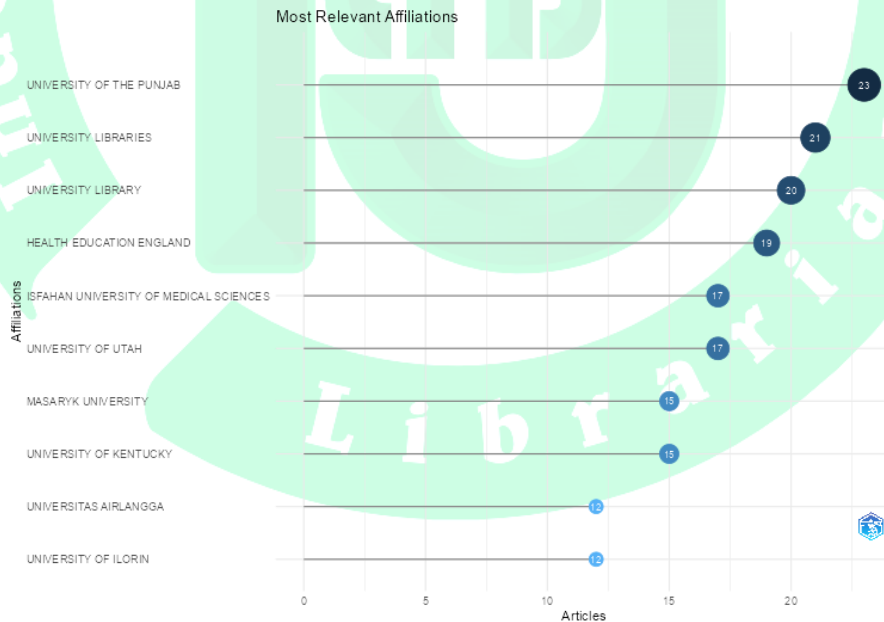
Authors	Articles	Articles Fractionalized
ASHIQ, MURTAZA	4	1,08333333
BÉLANGER, ANNIE	4	3,5
CHIU, DICKSON K.W.	4	1,25
CORRADO, EDWARD M.	4	3,5

Source: Prepared by the authors based on Scopus data analyzed using Biblioshiny (2025).

The analysis using Biblioshiny identified the ten most productive authors, along with their proportional contributions (fractionalized counts), which serve as indicators of both author productivity and individual contributions to each article. Adetayo, Adebowale Jeremy, and Ajani, Yusuf Ayodeji, each published 7 articles; however, their fractional contributions were 2.75 and 2.20, respectively. This difference indicates that the majority of their publications were collaborative works involving multiple co-authors, resulting in a smaller proportional contribution per author. Meanwhile, Peter Fernandez recorded the highest fractionalized count of 5.00 with five published articles, suggesting that the author likely served as either a sole author or a primary contributor with a substantial individual role in each publication.

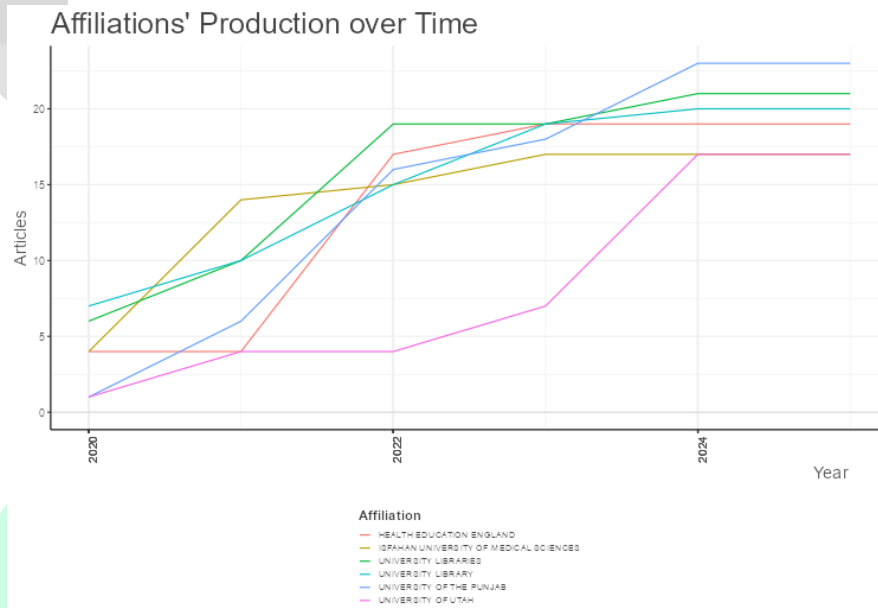
These findings indicate that author productivity can be measured from multiple perspectives, including both the number of published documents and the extent of their actual contributions. This highlights the important role of collaboration in library service research.

Figure 4.
List of the Top 10 Contributing Institutions



Source: Prepared by the authors based on Scopus data analyzed using Biblioshiny (2025).

Figure 5.
Development of Publications Produced by Institutions



Source: Prepared by the authors based on Scopus data analyzed using Biblioshiny (2025).

This analysis was conducted to identify institutions that contributed to scientific publications related to library services during the period from 2020 to March 2025. Based on the visualization of publication distribution by institution presented in Figure 4, several universities were identified as having a dominant role in the development of research in this field. The institution with the highest number of publications was the University of the Punjab, followed by the University Libraries and the University Library. Institutional dominance is reflected in the size of the nodes in the visualization, with larger circles indicating a higher number of publications by the institution.

The trend analysis of publication output by institutional affiliation over time, as shown in Figure 5, indicates that several institutions increased research productivity from 2020 and peaked in 2023, suggesting a stronger institutional strategic focus in the post-pandemic period. After this peak, several affiliations showed dropping or stagnant productivity, which may reflect the completion of major research projects, changes in research funding, or shifts in institutional priorities. Overall, these findings indicate uneven institutional contributions to scientific publications, shaped by institutional policy support, research funding availability, and the extent of international collaborative networks maintained by the institution.

Table 9.
List of Journals Publishing Articles on Library Services

So	Rank	Freq	CumFreq	Zone
Library Philosophy And Practice	1	100	100	Zone 1
Journal Of The Medical Library Association	2	57	157	Zone 1
Digital Library Perspectives	3	52	209	Zone 1
Medical Reference Service Quarterly	4	48	257	Zone 1
Health Information And Libraries Journal	5	42	299	Zone 1

So	Rank	Freq	CumFreq	Zone
Proceedings Of The Association For Information Science And Technology	6	37	336	Zone 2
Technical Services Quarterly	7	30	366	Zone 2
Library Hitech News	8	23	389	Zone 2
Serials Librarian	9	22	411	Zone 2

Sumber: Diolah Penulis dari Data Scopus yang Dianalisis Biblioshiny, 2025

The analysis of publication sources identified the journals that published the most articles on library services during March 2020 to March 2025. A total of 9 main journals were categorized into 2 zones according to Bradford's Law. This principle is a well-established methodology for identifying core journals across various academic fields. Menurut Bradford (1934), "if scientific journals are arranged in order of decreasing productivity of articles on a given subject, they may be divided into a nucleus of periodicals more particularly devoted to the subject and several groups or zones containing the same number of articles as the nucleus, when the numbers of periodicals in the nucleus and succeeding zones will be as 1: n: n²[...]2" (Kt et al., 2022).

Bradford's Law describes the distribution of scientific articles on a given topic across journals. When journals are ranked by that pattern, core journals contain the most relevant articles. This distribution is typically segmented into zones. Although Bradford's Law traditionally divides journal distribution into three zones (core, intermediate, and peripheral), analysis in this study using Biblioshiny software indicates that the pattern is more accurately represented by two dominant zones.

Zone 1 represents the core literature in this field and consists of five journals with the highest publication output. The Library Philosophy and Practice was classified first, with the largest number of articles, totaling 100 publications. This journal serves as a primary publication outlet for library services research. It is followed by the Journal of the Medical Library Association with 57 publications, which emphasizes library-related issues in the health sector. The next journal is Digital Library Perspectives, with 52 publications, focusing on digital library issues highly relevant to the transformation of modern library services. The other two journals in this zone are Medical Reference Services Quarterly, with 48 articles, and the Health Information and Libraries Journal, with 42 articles.

Zone 2 includes journals with lower publication frequency. These journals include the Proceedings of the Association for Information Science and Technology (37 publications), Technical Services Quarterly (30 publications), Library Hi Tech News (23 publications), and The Serials Librarian (22 publications). These journals indicate that library services research is also distributed across information technology, technical management, and collection management, reflecting the field's multidisciplinary nature.

The power of Library Philosophy and Practice indicates that topics related to library services continue to have a significant presence in journals highly relevant to the field and with broad audiences, particularly those focusing on practical and theoretical studies in librarianship. Research on library services is not confined to a single domain but spans multidisciplinary journals, reflecting their interconnectedness with other fields such as health, information technology, and digital resource management. Journal selection is influenced not only by visibility and reputation but also by thematic relevance to the specific aspects of library services being examined.

Phrase analysis was completed using the Biblioshiny software's word cloud feature. The size of each phrase represents its frequency of occurrence across the 842 publication documents analyzed from the Scopus database. The three most frequently used phrases identified by the authors were "library" (259 occurrences), "human" (237 occurrences), and "article" (194 occurrences).

Table 10.
List of Frequently Occurring Phrases

Terms	Frequency
library	259
human	237
article	194
libraries	169
humans	146
librarian	129
libraries medical	110
library services	99
united states	79

Source: Prepared by the authors based on Scopus data analyzed using Biblioshiny (2025).

Figure 6.
Word Cloud Analysis of Keyword Frequency



Source: Prepared by the authors based on Scopus data analyzed using Biblioshiny (2025).

The analysis above shows a word cloud generated by Biblioshiny to illustrate keyword frequency in the analyzed publications. In Figure 6, larger font sizes indicate more frequent word appearances. As shown in Table 10, the most recognized terms are “library” (259 occurrences), “human” (237 occurrences), and “article” (194 occurrences). This word cloud provides a quick overview of the dominant topics in the publications and helps identify research trends in library studies. The emergence of the term “library” as the most prominent phrase confirms that the library itself remains the primary object of study. Research in this field focuses on diverse aspects of libraries, ranging from internal management, collections, and infrastructure, both physical and digital, to the role of libraries within society. Despite ongoing developments in library services, the identity and function of libraries remain central to research. The frequent use of the term “human” indicates that library service research is largely user-centered. This reflects the strong attention given to users’ needs and behaviors in information-seeking processes, as well as their experiences in interacting with library services.

Meanwhile, the prominence of the term “article” highlights the significance of scientific publications as both research outputs and objects of analysis. Such studies commonly examine how articles are used in research or analyze the articles themselves, making them a frequent unit of analysis.

Discussion of Research Findings. The findings of this study indicate that publications on library services increased in 2020-2021, then gradually declined until March 2025. This pattern demonstrates that the dynamics of library services research are significantly influenced by changes in the global context, particularly the COVID-19 pandemic, which has driven the transformation of library services toward digital services. This finding is similar to the research of Dhinosa and Faizah (2024), who found an increase in publications at the start of the pandemic due to the increased demand for digital library services, followed by a decline in the following year.

The findings of this study indicate that the United States is the country with the highest publication productivity. This is consistent with the research of Faridan and Lawanda (2024), who found the United States dominates research on library services based on institutional repositories. This similarity indicates that the United States remains a center for the development of library and information science globally. Conversely, the contribution of developing countries remains relatively low. This finding suggests that the research capacity gap remains a challenge in the field of library science. Therefore, increasing cross-border collaboration is an important strategy for expanding research contributions with other countries.

Another interesting finding is the shift in research focus from topics on conventional library services to the digitalization of services. This shift demonstrates that the development of information technology is a major factor shaping the direction of library services research. This finding expands on the research of Faridan and Lawanda (2024), who positioned institutional repositories as the primary focus of library services research. This study demonstrates that after the development of the repository era, the research focus shifted toward utilizing technology and data-based services as a form of library transformation.

Overall, this study offers a distinct contribution compared to previous research. While previous research focused primarily on mapping specific library services topics, such as institutional repositories, this study presents a comprehensive overview of the development of library services research globally using 842 Scopus articles from 2020 to March 2025. With this broader data coverage, the study not only identifies publication productivity but also maps collaboration networks, institutional and country productivity, and the development of research themes, thus providing a picture of the direction of library services research development globally.

Research Limitations (Disclaimer). This study has several limitations in interpreting the results. First, the data comes only from the Scopus database, so it does not represent all library service publications indexed in other databases. Second, the study period is limited to 2020 to March 2025, so the 2025 data does not reflect the publication conditions for the entire year. Consequently, publication trends in 2025 are still provisional and may change as publications increase until the end of the year.

IV. CONCLUSION

A bibliometric analysis of research on library services from 2020 to March 2025, utilizing the Scopus database and analyzed with VOSviewer and Biblioshiny, identifies several significant patterns. Publication output increased most sharply between 2020 and 2021, followed by a steady decline that culminated in a marked reduction by March 2025. These trends suggest that external factors, including the COVID-19 pandemic and evolving academic demands, have influenced research activities in this domain.

Geographically, the United States, India, and Nigeria are the leading contributors to scholarly work in this field, with international collaborations spanning multiple regions. Author analysis reveals several prolific scholars, such as Diketui Ajani, Yusuf Ayodeji, and Adebowale Jeremy Adetayo, while many others have contributed only a few publications.

These findings suggest opportunities to strengthen collaborative networks, especially by engaging emerging scholars, to improve both the quality and quantity of future research.

At the institutional level, the University of the Punjab is identified as a major contributor to publications on library services. This underscores the essential role of universities as research hubs, supported by robust and consistent human resources. The prominence of certain institutions reflects academic excellence and may serve as a reference point and potential avenue for collaboration among researchers.

The primary publication sources in this field are journals such as *Library Philosophy and Practice* and *Medical Library Association*, both of which focus on library technology and information service management. These journals are likely preferred publication venues due to their broad scope and their coverage of the practical dimensions of librarianship. The prominence of the *Medical Library Association* also indicates the existence of a strong research subfield linking library services with the healthcare sector. This publication preference provides valuable insight into the most relevant and influential journal platforms for researchers in library services.

The phrase analysis further reveals that themes such as library, user services, human resources, and articles remain dominant within the research landscape. These findings are reinforced by the word cloud visualization generated through Biblioshiny, which illustrates the frequency of highly recurrent keywords such as “library,” “human,” and “article.” The repeated occurrence of these terms highlights the library itself as the primary object of study. In addition, the prominence of user-centered terms emphasizes the centrality of library users in service development, while the frequent appearance of “article” reflects the empirical nature of this research domain, which is largely disseminated through scholarly publications.

Research trends in library services during the observed period show a clear shift toward technology and digitalization as strategic efforts to better serve users. This digital transformation requires libraries to adapt, innovate, and enhance librarians' competencies to meet evolving service demands.

The findings on international collaboration among authors from various countries, along with the presence of highly productive researchers, underscore the importance of collaboration in fostering future research growth and quality. Collaborative efforts enable the exchange of ideas, expertise, and resources, enriching research findings and accelerating innovation in library services.

Future Work. By identifying and analyzing emerging research trends, this study provides a clearer perspective on the developmental trajectory of research in library services. The findings may serve as a foundational reference for formulating policies and strategic frameworks for library service development that are more relevant and adaptive to future user needs. Furthermore, this study opens the door for future researchers to conduct more in-depth investigations into innovation, technology, and management in library services.

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