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Research Article

Research Output and Impact in Data Science and Informetrics: A Bibliometric Study of JDSICS (2022–2024)

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ABSTRACT

This study presents a comprehensive bibliometric analysis of the Journal of Data Science, Informetrics, and Citation Studies (JDSICS) over the period 2022–2024. Using data collected from the journal's official website and verified through bibliographic databases, Google Scholar. A total of 57 research articles were examined across key indicators, including publication trends, authorship patterns, institutional affiliations, geographic distribution, major themes, and keyword usage. The results reveal a steady growth in publication output, with a significant increase in both the number of issues and articles published annually. Collaborative research dominates the authorship landscape, with two-author contributions being most frequent. India emerged as the leading contributor, accounting for over 85% of the total publications, followed by limited contributions from Pakistan, Iran, and Malaysia. Thematic analysis highlights bibliometrics, scientometrics, and subject-specific research mapping as the most explored areas, while keyword frequency further confirms the journal's focus on scholarly communication and research evaluation. The study concludes that JDSICS is gaining momentum as a vital platform for researchers in data science, informetrics, and citation studies, while also encouraging broader international participation and interdisciplinary engagement.

Keywords: Bibliometrics, Data Science, Informetrics, Citation Studies, JDSICS, Scientometrics, Altmetrics, Research Output.

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INTRODUCTION

Bibliometric analysis is a widely accepted method for evaluating research productivity, author collaboration, and thematic focus within academic journals. The Journal of Data Science, Informetrics, and Citation Studies (JDSICS), established in 2022, offers a platform for interdisciplinary scholarship in scientometrics, bibliometrics, data science, and citation analysis. This study investigates JDSICS's output from its inception through 2024, offering insights into publication trends, authorship, institutional distribution, and research themes. In recent years, the exponential growth of scholarly publications has necessitated the development of robust methods for analysing research trends, author productivity, institutional contributions, and citation patterns. Bibliometrics, a quantitative tool used to analyse written publications, has emerged as a valuable methodology for understanding the structure and dynamics of academic literature across disciplines. This study presents a comprehensive bibliometric analysis of the Journal of Data Science, Informetrics, and Citation Studies (JDSICS) for the period 2022 to 2024.

JDSICS, as an emerging platform in the domain of data science and bibliometric research, has garnered increasing attention for its interdisciplinary approach to scholarly communication, citation behaviour, and research impact assessment. Analysing its content provides insights into the evolving landscape of informetrics, data-driven decision-making, and the shifting paradigms in scholarly publishing. This study examines various bibliometric indicators, including the number of articles published, authorship patterns, country-wise distribution of contributions, institutional affiliations, keyword trends, and citation metrics.

The objective of this bibliometric study is twofold: first, to identify the intellectual and geographical structure of contributions to JDSICS, and second, to map the thematic evolution of the journal's content over the three years. Such an analysis not only highlights the journal's role in disseminating key research but also helps stakeholders authors, editors, institutions, and policymakers better understand publication trends, collaboration networks, and the journal's scholarly influence.

By employing standard bibliometric tools and techniques, including co-authorship analysis, citation analysis, and keyword co-occurrence mapping, this study offers a data-driven overview of the journal's development from 2022 to 2024. The findings aim to support future editorial strategies, promote global research

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collaboration, and enhance the visibility of research published in the field of data science and informetrics.

LITERATURE REVIEW

Bibliometric analysis has become an essential methodology in evaluating scientific publications, scholarly communication patterns, and research performance across disciplines. Originating from library and information science, bibliometrics has expanded into diverse fields, offering valuable insights into the productivity, impact, and collaboration networks of authors, journals, institutions, and countries. According to Hood and Wilson (2001), bibliometric studies help measure the development and structure of knowledge domains through quantitative indicators such as citation counts, publication frequency, and co-authorship patterns. These studies have applied bibliometric techniques to assess journals in various disciplines, including information science (Tsay & Shu, 2011), scientometrics (Aria & Cuccurullo, 2017), and data science (García-Peñalvo *et al.*, 2020). These studies typically focus on publication productivity, citation impact, co-citation and co-authorship networks, and keyword analysis. For example, Singh and Bebi (2020) conducted a bibliometric study of the journal DESIDOC Journal of Library and Information Technology, highlighting the authorship trends and citation metrics. Similar analyses have been conducted for journals like Scientometrics, Journal of Informetrics, and Information Processing & Management, offering benchmarks for understanding the performance of scholarly journals. Donthu *et al.*, (2021) emphasized the increasing use of bibliometric methods in business and management research, highlighting the adaptability of such techniques across diverse fields. The emergence of hybrid and open-access publishing models during the post-pandemic period has also intensified the interest in analysing journal productivity, citation impact, and author collaboration (Baishya & Hazarika, 2022). Kaur and Garg (2022) conducted a bibliometric analysis of the Journal of Informetrics, revealing key contributors, institutional affiliations, and the growing prominence of topics such as altmetrics and open science. Similarly, Singh and Kumar (2023) examined research output in the *Scientometrics* journal, noting a sharp increase in international collaborations and interdisciplinary studies. These studies underscore the utility of bibliometric tools such as VOS viewer and Bibliometric for mapping co-authorship networks, keyword trends, and citation structures. Furthermore, the role of bibliometrics in understanding the development of data science as a discipline has gained attention. A study by Zhao *et al.*, (2023) used bibliometric mapping to explore the evolution of machine learning and big data research, while Tanwar and Bansal (2024) analysed data science literature to identify emerging research clusters and applications in healthcare, finance, and education. These works collectively highlight how bibliometric techniques can uncover hidden patterns and guide future research directions.

Despite a growing body of bibliometric literature, there remains a lack of focused analysis on emerging journals like the Journal of Data Science, Informetrics, and Citation Studies (JDSICS). As a journal operating at the intersection of data science and information science, JDSICS serves as a valuable case for understanding recent publication dynamics and scholarly communication trends. This study addresses this gap by providing a focused bibliometric assessment of JDSICS from 2022 to 2024, thereby contributing to the broader discourse on research evaluation and information metrics.

STUDY OBJECTIVES

- To assess the annual publication output of JDSICS (2022–2024).
- To examine the authorship pattern and collaboration trends.
- To identify prolific authors and contributing institutions.
- To analyse thematic trends and subject coverage.
- To explore the geographical distribution of contributions.

SCOPE

This bibliometric study focuses exclusively on the research articles published in the Journal of Data Science, Informetrics, and Citation Studies (JDSICS) during the period from 2022 to 2024. It aims to analyse the journal's scholarly output by examining various bibliometric indicators, including publication trends, authorship patterns, institutional and geographical affiliations of contributors, citation impact, and thematic distribution based on keyword analysis. The study also explores co-authorship networks to understand collaboration trends among researchers. Only peer-reviewed research articles, such as original papers and reviews, are considered, while non-research content like editorials and book reviews is excluded. The data is sourced from recognized bibliographic databases and the journal's official repository, ensuring accuracy and relevance. By narrowing the scope to this specific journal and timeframe, the study seeks to provide insights into the recent scholarly communication patterns and research dynamics in the fields of data science, informetrics, and citation studies.

LIMITATIONS

Despite its comprehensive approach, this bibliometric study has certain limitations. First, the analysis is restricted to articles published in the Journal of Data Science, Informetrics, and Citation Studies from 2022 to 2024, which may not capture longer-term trends or the journal's complete scholarly trajectory. Second, the data used for analysis is primarily drawn from a secondary source, Google Scholar, or the journal's website, and may be subject to discrepancies or incomplete records. Third,

citation counts may vary across databases and do not necessarily reflect the true academic impact of the articles due to time lag or differing indexing policies. Additionally, qualitative aspects such as the depth, originality, or societal relevance of research outputs are beyond the scope of this quantitative analysis. Finally, language and regional biases might be present, as the journal may attract submissions from particular academic communities more than others.

METHODOLOGY

This study employs a quantitative bibliometric approach to analyse the publications of the Journal of Data Science, Informetrics, and Citation Studies (JDSICS) from 2022 to 2024. Data were collected from the journal's official website and cross-verified using reputable bibliographic databases Google Scholar. Only peer-reviewed research articles, including original papers and review articles, were included, while editorials, book reviews, and non-research content were excluded. Bibliographic information, such as author names, publication year, institutional affiliations, keywords, and citation counts, was extracted and organized using Microsoft Excel. The study examines key indicators, including publication output, authorship patterns, geographic and institutional contributions, citation impact, and thematic trends, to provide a comprehensive overview of the journal's research output and influence during the specified period.

DATA ANALYSIS AND RESULTS

Figure 1 shows the publication trend of the Journal of Data Science, Informetrics, and Citation Studies from 2022 to 2024 demonstrates a significant upward trajectory in both the number of issues released and the volume of articles published. In 2022, the journal released only one issue containing 7 articles, accounting for 12.28% of the total publications during the three years. However, a marked expansion occurred in 2023, with the number of issues increasing to three and the article count rising to 18, contributing 31.58% of the total output. This growth trend continued robustly into 2024, during which the journal published 32 articles across three issues, constituting the largest share at 56.14%. Overall, across seven issues published in three years, a total of 57 articles were disseminated, indicating a strong and consistent rise in the journal's productivity. This pattern reflects the journal's growing influence, increased submissions, and expanding editorial scope within the domains of data science, informetrics, and citation studies.

Figure 2 shows the authorship pattern of the 57 articles published in the Journal of Data Science, Informetrics, and Citation Studies from 2022 to 2024 reveals a strong inclination toward collaborative research. Two-author contributions are the most prevalent, accounting for 22 articles or 38.60% of the total output, highlighting the importance of collaborative work in this field. This is followed by three-author articles, which comprise 13 publications (22.81%), and single-author contributions, totalling 12 articles (21.05%). Interestingly, a significant portion of the research, 10 articles or 17.54%, involves four or more authors, indicating the presence of larger research teams in a notable number of studies. These findings suggest a dominant trend toward multi-authored works, reflecting interdisciplinary collaboration and joint scholarly efforts in data science and informetrics research.

Figure 3 shows an analysis of author productivity in the Journal of Data Science, Informetrics, and Citation Studies from 2022 to 2024 reveals that a small number of contributors account for a significant share of the total publications. Dr. K. Gunasekaran emerges as the most prolific author, with four contributions, followed by Dr. A. Anbu Selvi and Dr. K. Sivasubramanian, each with three articles. Dr. S. Banu and Dr. D. Sen have each contributed 2 articles. Collectively, these five authors are responsible for 14 articles, representing approximately 24.56% of the total output. The remaining 43 articles, accounting for 75.44%, were contributed by individual authors who published only one article each. This distribution highlights a concentration of scholarly productivity among a few recurring contributors, while also reflecting broad participation from a wide array of researchers in the journal's publication ecosystem.

Figure 4 shows the institutional analysis of articles published in the Journal of Data Science, Informetrics, and Citation Studies from 2022 to 2024 shows a varied but concentrated pattern of contributions. The University of Madras, Chennai, leads with 5 articles, establishing itself as the top contributing institution. This is followed by Alagappa University, Karaikudi, with 4 articles, and the University of Calcutta with 3 articles. Pondicherry University has contributed 2 articles during the study period. Notably, the majority of publications, 43 articles, accounting for 75.44% of the total, originate from independent researchers and other colleges and universities, indicating a wide and diverse pool of contributors beyond the leading institutions. This distribution reflects both the inclusive nature of the journal in attracting submissions from various academic backgrounds and the active involvement of regional and individual scholars in the fields of data science, informetrics, and citation studies.

Figure 5 shows the country-wise distribution of articles published in the Journal of Data Science, Informetrics, and Citation Studies from 2022 to 2024 reveals a strong regional dominance. India is the leading contributor, with 49 articles, accounting for a substantial 85.96% of the total publications. This indicates that the journal primarily attracts submissions from Indian researchers and institutions. Pakistan follows with 3 articles (5.26%), while Iran contributed 2 articles (3.51%). Malaysia recorded 1 article (1.75%), and the remaining 2 articles (3.51%) came from other countries. The data highlights the journal's current regional focus, particularly within South Asia, while also showing signs

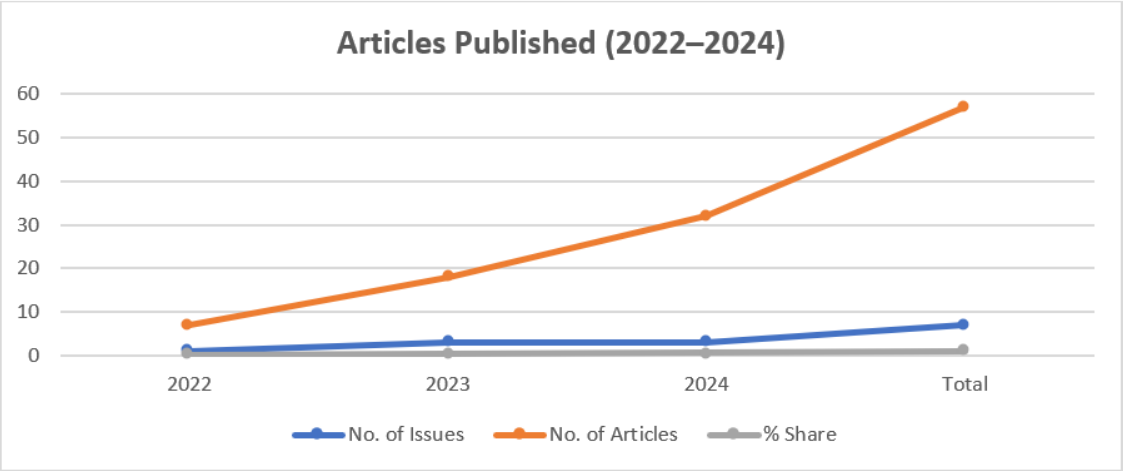

Figure 1: Total Number of Articles Published (2022–2024).

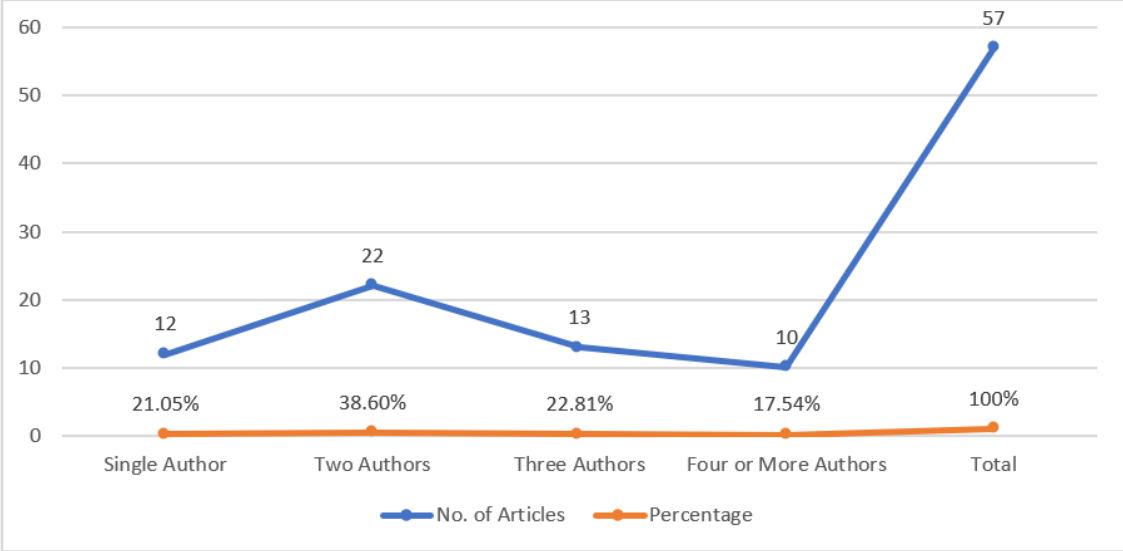

Figure 2: Distribution of Authorship by Number of Authors (2022–2024).

of growing international participation. The contributions from countries outside India, though limited, suggest the potential for the journal to broaden its global reach in the coming years.

Figure 6 shows the thematic analysis of the articles published in the Journal of Data Science, Informetrics, and Citation Studies from 2022 to 2024 reveals a diverse range of research areas within the broader field of information and data science. The most prominent topic is Bibliometrics/Scientometrics, represented by 18 articles, indicating the journal's strong focus on quantitative analysis of scholarly literature. Subject-specific Research Mapping accounts for 13 articles, reflecting the interest in applying bibliometric methods to explore trends in specific disciplines. Scientometric Portraits studies focused on profiling individual researchers contribute 8 articles, while Institutional Performance Studies make up 7 articles, emphasizing the assessment of academic and research productivity. Altmetrics and Research Visibility, a growing area of interest that explores online engagement and impact beyond traditional citations, is featured in 6 articles. Meanwhile, Data Science and Machine Learning, though less dominant, appear in 5 articles, pointing to the journal's expanding scope into computational and emerging technologies. This thematic distribution underscores the journal's role in fostering interdisciplinary dialogue across metrics-based research, digital scholarship, and data-driven analysis.

Figure 7 shows an examination of keyword frequency in articles published in the Journal of Data Science, Informetrics, and Citation Studies from 2022 to 2024 reveals dominant themes aligned with the journal's core focus areas. The most frequently occurring keyword is "Bibliometrics", appearing 23 times, reflecting the centrality of bibliometric analysis in the journal's content. This is closely followed by "Scientometrics" with 17 occurrences, indicating continued scholarly interest in evaluating scientific research output and impact. "Altmetrics" appears 9 times, underscoring the growing relevance of alternative metrics in measuring research visibility in digital and social media environments. "Citation Analysis" and "Research Productivity"

are also commonly used, with 7 and 6 mentions, respectively, reflecting an emphasis on quantitative evaluation of scholarly influence. The inclusion of "Data Science" (5 occurrences) and "Open Access" (4 occurrences) shows the journal's responsiveness to emerging trends in data-driven research and evolving publishing models. The keyword "India" appears 4 times, consistent with the high proportion of Indian contributors and studies focusing on national-level research output. Overall, the keyword analysis highlights the journal's alignment with contemporary themes in bibliometrics, scholarly communication, and research assessment.

MAJOR FINDINGS

The bibliometric analysis of the Journal of Data Science, Informetrics, and Citation Studies (JDSICS) from 2022 to 2024 reveals several important trends and insights:

- The journal has shown a consistent and notable growth in publication output over the three years. Starting with 7 articles in a single issue in 2022, it expanded to 18 articles across three issues in 2023, and reached 32 articles in 2024, demonstrating a significant rise in scholarly engagement and journal activity.
- The majority of articles were co-authored, with two-author papers accounting for the highest share (38.60%), followed by three-author (22.81%) and four or more authors (17.54%). Single-author articles represented only 21.05%, indicating a strong culture of collaborative research.
- Dr. K. Gunasekaran emerged as the most prolific author with four contributions, followed by Dr. A. Anbu Selvi and Dr. K. Sivasubramanian with three each. Most other authors (43) contributed one article each, suggesting a balance between core contributors and broader participation.

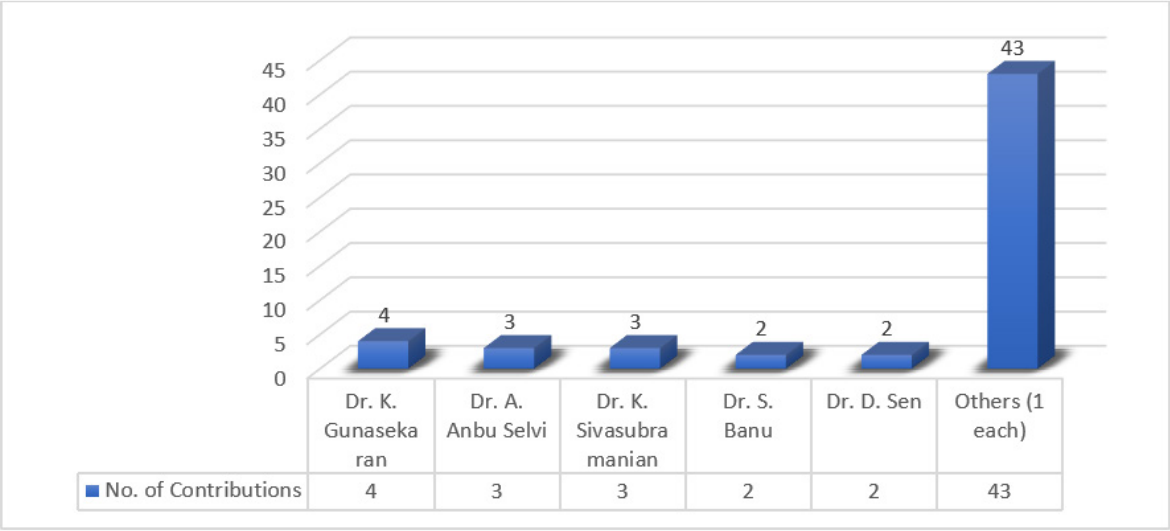

Figure 3: Authors with Highest Publication Output (2022–2024).

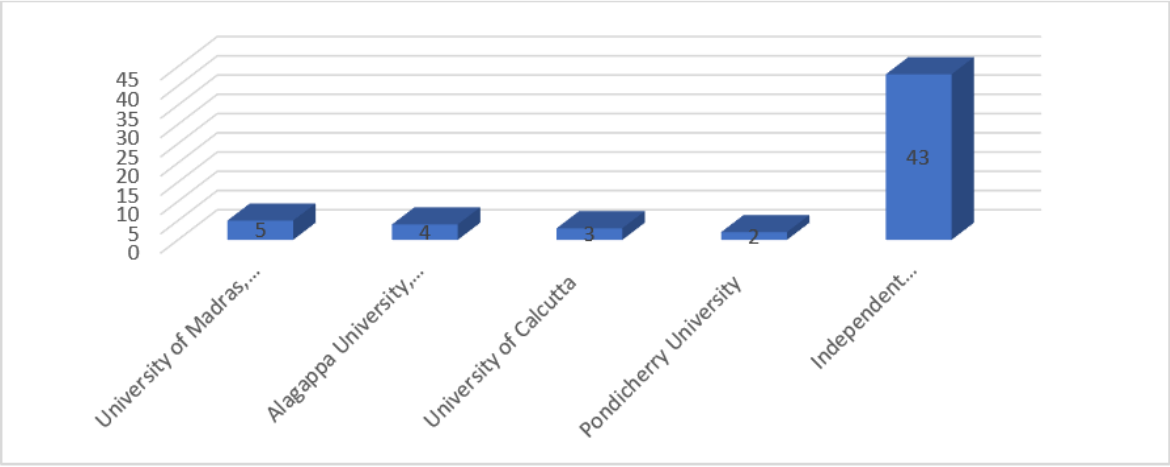

Figure 4: University-wise Contribution to the Journal (2022–2024).

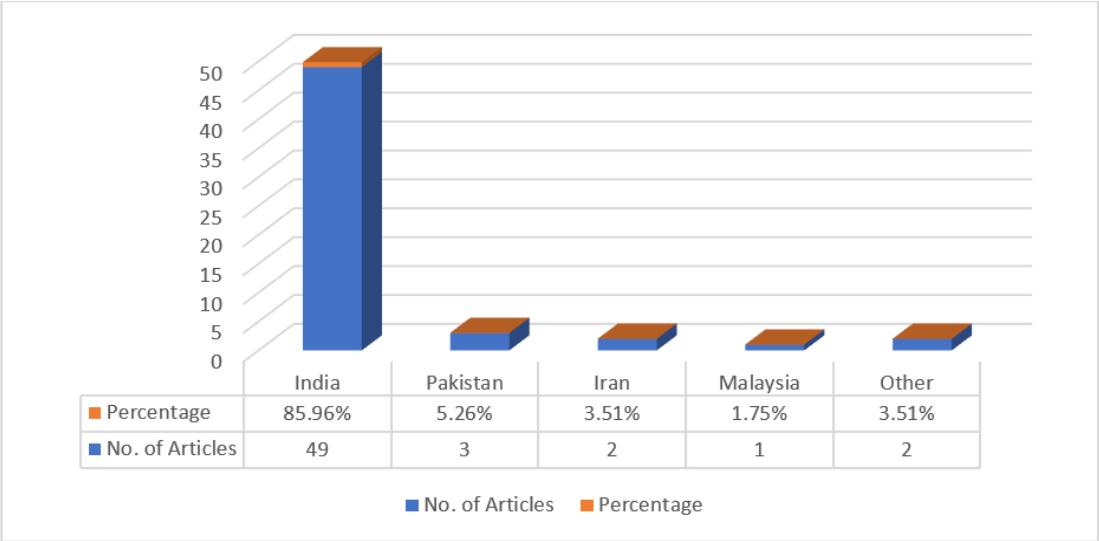

Figure 5: Country-wise Distribution of Published Articles (2022–2024).

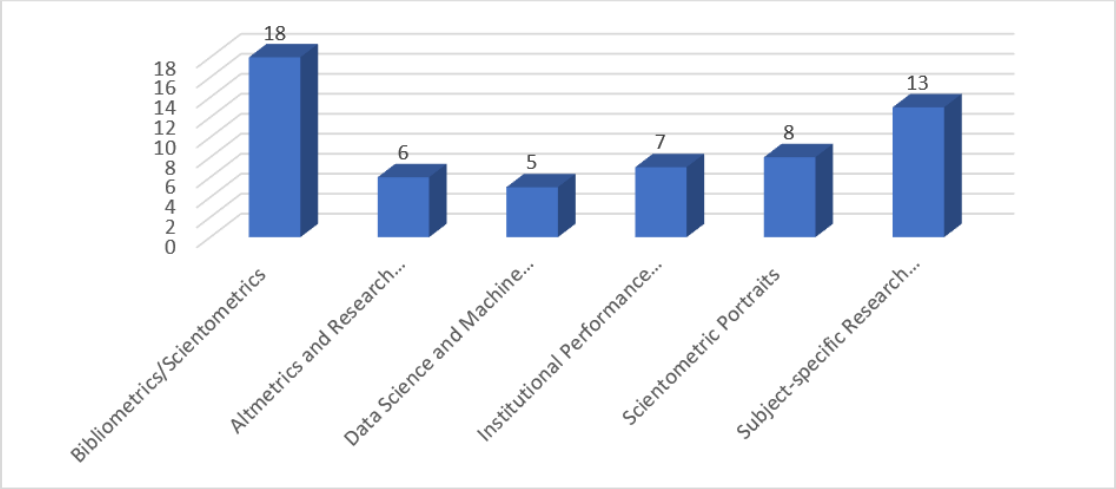

Figure 6: Topic-wise Distribution of Research Contributions (2022–2024).

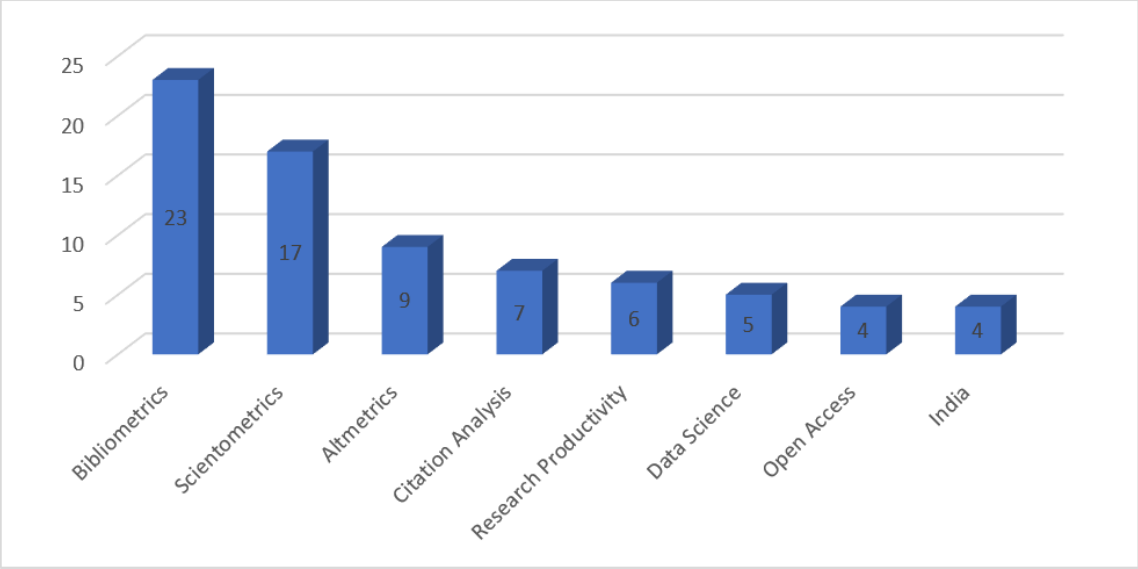

Figure 7: Keyword Frequency Distribution (2022–2024).

- The University of Madras led with five articles, followed by Alagappa University (4), University of Calcutta (3), and Pondicherry University (2). However, a large proportion of contributions (75.44%) came from independent researchers or faculty from a wide range of institutions, reflecting the journal's openness and inclusivity.
- India dominated the authorship landscape with 49 articles (85.96%), followed by Pakistan, Iran, Malaysia, and a few other countries. This highlights the journal's strong national base while showing emerging international reach.
- The most frequently addressed topics were Bibliometrics/Scientometrics (18 articles), Subject-specific Research Mapping (13), and Scientometric Portraits (8). Emerging areas such as Altmetrics (6) and Data Science/Machine Learning (5) were also represented, showing thematic diversity and evolving interests.
- "Bibliometrics" and "Scientometrics" were the most commonly used keywords, with frequencies of 23 and 17, respectively, followed by Altmetrics, Citation Analysis, Research Productivity, and Data Science. The recurrence of these terms reflects the journal's alignment with its core thematic domains.

The journal has demonstrated substantial growth over the three years analysed. The dominance of Indian authors and institutions reflects the regional concentration of interest in informatics and data science research. The increasing number of articles and thematic breadth indicate the journal's expanding reach and academic relevance.

CONCLUSION

The bibliometric study of the Journal of Data Science, Informetrics, and Citation Studies (JDSICS) covering the period from 2022 to 2024 provides valuable insights into the journal's publication trends, authorship patterns, institutional affiliations, thematic focus, and scholarly impact. The results reveal a steady and significant growth in the number of published articles, reflecting the journal's increasing prominence and acceptance within the academic community. A notable trend toward collaborative research was observed, with two- and three-author papers comprising the majority of publications. The dominance of Indian researchers and institutions indicates that while the journal currently has a strong regional base, it is gradually attracting international contributions as well.

Thematically, the journal remains focused on its core areas like bibliometrics, scientometrics, citation analysis, and research mapping, while also incorporating emerging topics such as altmetrics and data science. Keyword analysis supports this, showcasing a recurring emphasis on scholarly communication and research evaluation. The active participation of both established scholars and independent researchers points to the journal's inclusive and interdisciplinary appeal.

Overall, this study underscores the journal's growing role as a platform for research in information science, data analysis, and research assessment. The findings serve as a benchmark for editors, authors, and policy-makers to understand the journal's developmental trajectory and guide future directions in editorial planning, international outreach, and content diversification.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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